

**Phase I Site Investigation Report
Preliminary Study Area
Boise, Idaho**

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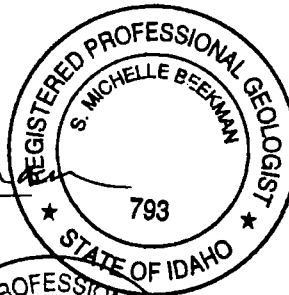
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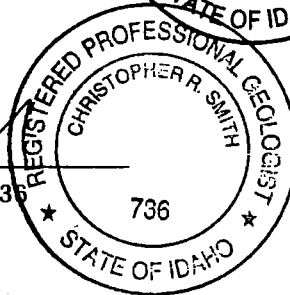
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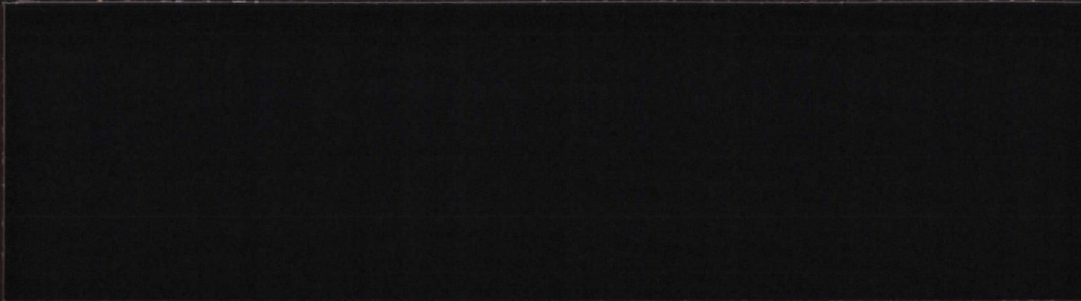
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Preliminary Study Area
Boise, Idaho**

HLA Project No. 20783 007

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EXECUTIVE SUMMARY

Van Waters & Rogers Inc. (VW&R) operated a chemical warehouse and distribution facility in Boise, Idaho, from approximately 1973 to 1983. A 6,000-gallon above ground storage tank (AST) used to store perchloroethylene (PCE) was located at the former facility. A Pier 1 Imports store currently occupies the general area where the warehouse was located. The Pier 1 Imports store is part of the Boise Towne Square Mall (Mall).

Subsurface investigations began at the Mall and vicinity of the Mall in approximately 1988. The investigations indicated the presence of volatile organic compounds (VOCs) in soil and groundwater adjacent to and downgradient of the former PCE AST.

VW&R and the Idaho Department of Health and Welfare, Division of Environmental Quality (Department) executed a Consent Order effective as of October 9, 1992 (PSA Order) which requires investigation and, if necessary, interim remediation of the area downgradient of the Mall known as the Preliminary Study Area (PSA). A separate Consent Order was signed for the Mall. This Site Investigation (SI) Report describes the results of the Phase I SI activities. A Phase II Work Plan to address data gaps identified during this Phase I investigation is being submitted to the Department concurrently with this report. A new Consent Order (Affected Area Order) will address potential final remediation of the area identified in this SI where PCE concentrations in groundwater exceed the EPA's maximum contaminant level of 5 micrograms per liter ($\mu\text{g/l}$) (Affected Area).

The purpose of the SI was to evaluate the nature and extent of VOCs in groundwater and surface water. A separate Risk Assessment is being prepared to evaluate the potential migration pathways, potential receptors, and the potential risk to human health and the environment from exposure to VOCs detected in groundwater and surface water in the PSA and is expected to be completed with the Phase II investigative activities.

Site Investigation

SI activities included groundwater sampling to delineate the area where groundwater has been impacted by VOCs, surface water sampling, a geophysical pilot study, pilot boring and monitoring/extraction well installation, and data validation. The SI activities were conducted in accordance with Department-approved work plans, a Quality Assurance Project Plan (QAPP), and a Site Safety Plan. Each of these plans was prepared prior to initiating the SI and was reviewed and approved by the Department.

The findings of the SI have been integrated with the data available from the site characterization studies conducted by others. Based on these integrated data, the characteristics and features of the site relevant to the SI process have been summarized. The site characteristics and features relevant to the SI include site geology and hydrogeology, groundwater quality, and surface water quality.

Site Geology and Hydrogeology

Based on the integration of all the data available from project-specific borings, logs of nearby wells, and a review of the regional geology, the geology and hydrogeology at the site may be summarized as follows:

- The stratigraphy in the northwestern portion of the site generally consists of approximately 5 feet of silty sand or sandy silt underlain by 30 to 35 feet of sandy gravel. The sandy gravel is underlain by silty sand to an approximate depth of 135 feet. According to the Bali Hai Well log, approximately 75 feet of "blue" clay underlies the silty sand.
- According to boring logs generated by Special Resource Management (SRM), the shallow stratigraphy in the Westpark area

is similar to the stratigraphy in the northwestern portion of the PSA and, in general, consists of five feet of clay or silty sand underlain by 30 to 35 feet of sandy gravel or gravelly sand. Silty sand is present beneath the gravels to an approximate depth of 35 to 40 feet.

- Seismic reflection survey results suggest the presence of a low permeability layer (e.g., clay) at an approximate depth of 150 feet bgs near 1941 N. Five Mile Road.
- The shallow aquifer beneath the site is unconfined. Groundwater levels fluctuate during the irrigation season. In general, depth to water ranges from approximately 10 to 15 feet bgs during the irrigation season, and from approximately 15 to 20 feet bgs during the nonirrigation season.
- The canals and laterals generally discharge water to the shallow groundwater except when (during the irrigation season) the water table rises above the bottom of the laterals; the laterals then act as groundwater drains.
- The laterals may influence local groundwater flow directions by creating a groundwater divide where mounding has resulted from surface water discharging to groundwater. The depth of this influence is not known.
- Pumping of the Bali Hai appears to have little to no impact on water levels in the shallow aquifer.
- Groundwater flows toward the north-northwest at a gradient of 0.002 and at a velocity of approximately 1.55 feet/day.

Groundwater Quality

The following summary of groundwater quality conditions is based on data collected during the SI and by VW&R and its representatives or other parties.

- The sample results obtained from wells within the PSA and analyzed for general minerals (e.g., pH, alkalinity, total dissolved

solids) indicated similar inorganic water quality across the site.

- Eleven halogenated VOCs have been detected in groundwater samples collected during the SI. PCE has been chosen as the primary chemical of concern based on the frequency of detection, history of the former VW&R facility, areal distribution, and concentration.
- PCE has been detected in groundwater in a narrow shaped plume that extends in a northwesterly direction from the Mall to N. Five Mile Road.
- The concentrations of PCE in groundwater are the highest in the Westpark area, directly downgradient of the Mall, and decrease toward the northwest (downgradient).
- PCE appears to be concentrated in the upper portion of the shallow aquifer, except where extensive pumping has occurred (e.g., community wells supplying numerous households).

Surface Water Quality

- PCE is the only VOC detected in surface water samples collected from the Finch Lateral.
- PCE was not detected in surface water samples collected upstream of where the Westpark air stripper discharge pipe enters the Finch Lateral.
- The concentrations of PCE detected in the Finch Lateral within the Affected Area suggest that PCE-impacted groundwater may be entering the Lateral.
- Concentrations decrease downstream, suggesting mixing with surface water discharging to the Lateral, volatilization of the PCE, and/or discharge of groundwater containing lower concentrations of PCE into the Lateral.

1.0 INTRODUCTION

This Phase I Site Investigation Report was prepared by Harding Lawson Associates (HLA) for Van Waters & Rogers Inc. (VW&R), Kirkland, Washington, for the area northwest (downgradient) of the Boise Towne Square Mall known as the Preliminary Study Area (PSA), Boise, Idaho (Plate 1). This report describes the results of the site investigation (SI) activities conducted in and near the PSA, and has been prepared to fulfill a condition of a Consent Order dated October 9, 1992 (PSA Order) between VW&R and the State of Idaho Department of Health and Welfare, Division of Environmental Quality (*Department, 1992c*). The scope of work for the SI was presented in *Exhibit 1, Work Plan, Preliminary Study Area Investigation, Boise, Idaho* (PSA Work Plan; *HLA, 1992c*). This SI report addresses comments received from the Department (*Department, 1995*) on the draft PSA SI report dated January 26, 1995. Copies of the Department's comment letter and a response letter (*HLA, 1995*) are included in the Appendix.

The purpose of the PSA SI was to evaluate the nature and extent of volatile organic compounds (VOCs) in groundwater and surface water. A separate risk assessment (RA) is being prepared to evaluate the potential migration pathways, potential receptors, and the potential risk to human health and the environment from exposure to VOCs detected in groundwater and surface water in the PSA. The RA will also identify preliminary cleanup levels (CLs) that will be included in the PSA Remedial Action Plan (RAP) to be submitted to the Department. The RA will be submitted to the Department upon completion of supplemental field activities to be conducted during a Phase II investigation.

The Phase II Work Plan was originally included as an Appendix to this report, but in accordance with Department comments, has been resubmitted as a separate document. The RAP will describe corrective measures, if warranted, to be implemented to protect human health and the environment from VOCs detected in groundwater and surface water within the PSA, and is the final document required under the PSA Order. Final remediation will be implemented, as necessary, under a new Consent Order (Affected Area Order).

This SI is structured as follows: Section 2.0 presents background information pertaining to the site history and SI activities conducted prior to October 9, 1992 (the effective date of the PSA order). A description of the physical characteristics of the site is presented in Section 3.0. The Phase I activities and results are presented in Section 4.0. Section 5.0 describes the proposed interim remedial measures. A discussion of the nature and extent of the VOCs detected in groundwater and surface water is presented in Section 6.0. Section 7.0 presents the summary and conclusions of the Phase I SI. References cited in this report are presented in Section 8.0. The Appendix consists of the Department's comment letter on the draft PSA SI report and a response to comments letter.

2.0 BACKGROUND

2.1 History

From approximately 1973 to 1983, VW&R operated a distribution facility from a portion of a warehouse located on Friendly Drive, Boise, Idaho. A 6,000-gallon above ground storage tank (AST) used to store perchloroethylene (PCE) was located in an outdoor storage area at the eastern end of the former warehouse. In approximately 1987 or 1988, the warehouse was removed under the direction of the Boise Mall Development Company or Price Development Corporation. A Pier 1 Imports store currently occupies the general area where the former warehouse was located. The current address of the Pier 1 Imports store is 140 Milwaukee Avenue, Boise, Idaho.

Beginning in approximately 1987, the area west and north of the 140 Milwaukee Avenue area was commercially developed. Projects include the Boise Towne Square Mall, a portion of a Westpark Shopping Center Associates (Westpark) development, development by Walla Walla Shopping Center Associates, other retail stores, light commercial buildings, and high density housing. During commercial development, PCE was detected in soil and groundwater samples. In 1991, VW&R conducted some preliminary soil and groundwater sampling in the vicinity of the former warehouse. PCE was detected in both the soil and groundwater samples (HLA, 1994e).

2.2 Consent Orders

Based on the results of the soil and groundwater sampling, VW&R negotiated three separate Consent Orders with the Department: the Boise Mall Order, the Preliminary Study Area Order, and the Water Supply Order. The Boise Mall Order encompasses investigation and remediation of the 140 Milwaukee Avenue Area and downgradient to the northwest end of the Mall property (Milwaukee Street) (Department, 1992b). A site investigation report/remedial action plan (SI/RAP) was completed for the Mall and submitted to the Department on November 2, 1994 (HLA, 1994e). In November 1994, a public

meeting was held to present the contents of the SI/RAP and to solicit comments from the public. The public comment period ended on December 9, 1994. The SI/RAP is being revised as appropriate and will be resubmitted for Department approval in February 1995.

The PSA Order provides for investigating the nature and extent of halogenated VOCs in groundwater and surface water downgradient of the Mall (Department, 1992c). The Water Supply Order requires the identification of the nature and extent of the PCE plume and identification of impacted private wells (Department, 1992a). VW&R has connected the majority of the properties with impacted wells to the Boise Water Company (BWC) water supply system. Because the Water Supply and PSA Orders cover the same geographical area, and data collected under one order is applicable to the other, this report includes data collected under both orders. Data collected under the Boise Mall Order is not included in this report.

2.3 Site Description

The PSA includes the theater property west of the 140 Milwaukee Avenue Area, and the area northwest of the Boise Towne Square Mall property. The PSA is generally bordered by N. Five Mile and Hampton Roads to the west, Sunflower Lane to the northwest, and the area between Emerald Street and the Union Pacific Railroad to the south (Plate 1).

2.4 Previous Investigations

Since 1987, and prior to October 9, 1992 (the effective date of the PSA Order) several environmental investigations have been conducted in the PSA. Data were collected at different times as part of the following investigations:

- Westpark Environmental Assessments conducted by Special Resource Management, Boise, Idaho (SRM)
- Westpark Remedial Action Plan written in January 1989 by SRM
- Quarterly groundwater monitoring by SRM pursuant to the January 13, 1989, Consent Order between the Department and Westpark
- Site Assessment at the Chen-Northern site conducted in August 1990
- Sampling of surface water and groundwater from private wells downgradient of the Westpark site in October 1990, July 1991, and April 1992 (surface water only) by the Department.

A summary of each of the above investigations is presented in the following sections. Additional investigations were conducted at the Boise Towne Square Mall and are summarized in the Mall Site Investigation Report/Remedial Action Plan (HLA, 1994e).

2.2.1 Westpark Investigations

During the development of the proposed Westpark Center (property bounded by Benjamin Lane, Milwaukee Avenue, and Emerald Road - Plate 2), PCE was detected in soil and groundwater samples. Subsequently, SRM was retained by the Westpark Partnership, the Westpark property owner, to conduct investigations to define the extent and source of the PCE. The first assessment was completed in November 1987 and included collection and analysis of soil and groundwater samples. PCE was detected in one of these groundwater samples (SRM, 1989).

The second site assessment was completed in March 1988 (SRM, 1988) to characterize the extent of the PCE contamination on the Westpark property. Additional monitoring wells were installed and sampled and approximately 28 surface and near surface soil samples collected in the vicinity of SRM Well MW-1 (Plate 2). Results indicated that PCE was present in groundwater in a plume oriented northwest

across the property at concentrations ranging from 10 to 2,500 micrograms per liter ($\mu\text{g/l}$). PCE was also detected in three of the surface composite soil samples collected where Westpark Extraction Wells WP-1, WP-2, and WP-3 are currently located (Plate 2) at concentrations ranging from 3 to 300 micrograms per kilogram ($\mu\text{g/kg}$). No samples were collected by SRM beyond the property boundaries.

The third Westpark site assessment was completed in October 1988 and included the collection and analysis of 20 shallow soil samples. PCE was detected at concentrations ranging from 1.0 $\mu\text{g/kg}$ to 3.4 $\mu\text{g/kg}$ in seven of the shallow soil samples (SRM, 1989).

In January 1989, Westpark and the Department agreed to a Consent Order that incorporated the cleanup plan presented in SRM's Remedial Action Plan (RAP) (SRM, 1989). The RAP proposed to pump and treat groundwater via air stripping to a cleanup level of 10 $\mu\text{g/l}$. Groundwater treatment began on March 12, 1990, and is currently underway. Treated groundwater is discharged to the Finch Lateral, formerly known as the South Slough, operated by the Nampa-Meridian Irrigation District. Groundwater monitoring is conducted and reported to the Department quarterly during treatment system operation. Table 1 presents data collected at the Westpark site by SRM between February 1991 and November 1993 (SRM, 1994).

2.2.2 Chen-Northern Investigations

In 1988 during the removal of a 1,000-gallon underground gasoline storage tank from the Chen-Northern facility on Benjamin Lane, elevated levels of aromatic VOCs were noted in the soil adjacent the tank, and a sheen was observed on the shallow groundwater surface. The tank basin was subsequently overexcavated to remove petroleum-contaminated soils.

In March 1989, monitoring wells were installed at the site to evaluate the extent of

petroleum-containing groundwater. Analytical results indicated the presence of elevated concentrations of hydrocarbon constituents in the groundwater at and downgradient of the former tank location. In 1990, four additional groundwater monitoring wells were installed downgradient of the former tank. Petroleum hydrocarbons were detected in two of the new wells.

In March 1991, three additional wells were installed near the site. Results indicated that the wells farthest downgradient did not contain petroleum hydrocarbon constituents (*Chen-Northern, 1991*). Chen-Northern has subsequently installed an air sparging and vapor extraction system to remediate the petroleum-impacted soil and groundwater.

2.2.3 State of Idaho Surface Water and Groundwater Sampling

In October 1990, the Department initiated a sampling program for the collection and analysis of surface water and groundwater samples from the area downgradient of the Westpark development. Thirty-four samples were collected from 10 surface water locations (Finch Lateral [formerly known as the South Slough] and drains/seeps entering it), 19 shallow [(less than 100 feet deep or unknown depth) domestic wells], and 5 deep (greater than 100 feet deep) domestic or supply wells. Sampling was conducted by Department staff by directly filling sample containers with water from the lateral or outside taps nearest the wells (*Baldwin, 1991*).

In July 1991, the Department collected six surface water samples from the Finch Lateral. In April 1992, the Department collected eight surface water samples from the Finch Lateral.

Results of the October 1990 sampling event indicated that PCE was detected in the Finch Lateral surface water beginning approximately at its intersection with Emerald Road, with PCE concentrations increasing toward the northwest to Maple Grove Road and then decreasing throughout the remainder of the length sampled. Samples collected upstream of the Westpark air

stripper effluent discharge point contained no detectable PCE. The highest PCE concentration (224 $\mu\text{g/l}$) was detected at a groundwater seep in the vicinity of Emerald Road. According to Department staff, the seep was most likely groundwater from the shallow aquifer discharging to the lateral. The highest PCE concentration in the lateral was 137 $\mu\text{g/l}$ at the intersection with Ridenbaugh Canal.

Results of the July 1991 Finch Lateral sampling event indicated that PCE was detected in the samples at concentrations between 1 and 54 $\mu\text{g/l}$. Samples collected downstream of the intersection of the lateral with Maple Grove Road had PCE concentrations ranging from 3.3 to 4.2 $\mu\text{g/l}$, indicating dilution with water diverted into the lateral from the Ridenbaugh Canal. The groundwater seep identified during the October 1990 sampling was not sampled.

The April 1992 sampling event detected PCE in the lateral at concentrations ranging from 0.4 to 6.9 $\mu\text{g/l}$. The trends in PCE concentrations along the length of the lateral observed during the 1991 and 1992 sampling events were similar to those observed in 1990.

Of 24 groundwater samples collected in October 1990, 15 contained detectable concentrations of PCE. PCE was detected in a majority of the shallow or unknown depth domestic groundwater wells at concentrations ranging from 1.27 to 147 $\mu\text{g/l}$. PCE was only detected in 2 of the deep wells; the Syringa Well located on Jewell Street (134 $\mu\text{g/l}$; total depth of 200 feet) and one other domestic well near Syringa (17.3 $\mu\text{g/l}$; total depth of 300 feet (*HLA, 1992c*)). A subsequent well survey conducted by the Department identified the domestic well near the Syringa Well as an unknown depth well.

3.0 PHYSICAL CHARACTERISTICS

This section describes the physical characteristics of the PSA and vicinity. These characteristics include climate; ecology; regional geology and hydrogeology; surface water hydrology; land uses and well inventory.

3.1 Climate

The Boise Valley has a climate that is characterized by cool, wet winters and warm dry summers. The mean annual precipitation in Boise is 11.42 inches, with only 25 percent occurring during the freeze-free growing season. Part of the winter precipitation is in the form of snow, but the snow generally does not last long in the Boise Valley. Heavier snow of longer duration generally falls in the mountains north of Boise. The mean annual maximum daytime temperature in Boise is 51.3°F. January has the lowest mean monthly temperature and July the highest, with maximums over 100°F during a few days every summer (*Dion, 1972*). Winds are predominantly southeasterly and average 8.9 miles per hour (mph; *Commerce, 1983*). Because of the dry climate in the Boise Valley, humidity is relatively low (averaging 58 percent over the year), with irrigated areas averaging slightly higher humidity (*Dion, 1972*).

3.2 Ecology

The PSA consists of commercial, residential, and agricultural land (i.e., pastures for horse and cow grazing). The PSA also contains surface water bodies consisting of numerous sloughs and irrigation canals. The naturally occurring vegetated areas consist mostly of sage, grasses, and other brush (*Mink and LeBaron, 1976*). Although numerous animal species have been observed in the area, especially in the area of the canals and sloughs (e.g., ducks and birds), no sensitive habitats exist within the PSA. According to the Idaho Department of Fish and Game, the area is not inhabited by any special status plants or animals (*Idaho Conservation Data Center, 1994*).

3.3 Regional Geology and Hydrogeology

The shallow geology in the vicinity of the site consists of 50 to 150 feet of unconsolidated silt, sand, and gravel of Pleistocene Age, referred to as older terrace gravels, that have been reworked and deposited by the Boise River (*Dion, 1972*). These older terrace gravels comprise the shallow aquifers in the area. Underlying and separated from the older terrace gravels by an unconformity is the Glenss Ferry Formation of Late Pliocene to Early Pleistocene Age. The Glenss Ferry Formation is composed of interbedded clay, silt, sand, fine gravel, and basalt up to 2,000 feet thick (*Dion, 1972*).

The top of the water table in the vicinity exists at an approximate depth of 8 to 15 feet below ground surface (bgs). The aquifer thickness ranges from approximately 40 to 140 feet. Localized groundwater recharge and discharge vary seasonally. Recharge generally occurs from the Ridenbaugh Canal, Farmers Lateral south of the site, local agricultural irrigation between April and October, and infiltration of precipitation. Localized groundwater discharge to the Finch Lateral has been observed. Although water levels and flow direction may fluctuate with the irrigation season, the predominant regional flow direction in the shallow aquifer is to the northwest. The presence of an aquitard separating the upper aquifer from the lower Glenss Ferry aquifer system is unconfirmed for the West Boise Area. However, data from well logs suggest that lower permeability units are laterally discontinuous in the West Boise area.

Hydraulic characteristics of the water table aquifer have been assessed in the Westpark area by SRM by conducting short duration pumping tests. Results of this testing indicated that transmissivity values for wells having depths of 41 feet to 47 feet ranged from 11,475 gallons per day per foot (gpd/ft)

to 43,000 gpd/ft. Based on data collected during a 12-hour pumping test, a storativity value of 0.03 was obtained. Hydraulic conductivities obtained during the test ranged from 1,991 gallons per day per square foot (gpd/ft²) to 600 gpd/ft², and averaged 1,273 gpd/ft² (SRM, 1989).

The deep aquifer system occurs in the sand, gravel, and basalt of the Glens Ferry Formation. Although the presence of a confining unit has not been confirmed, this unit has been reported as a confined aquifer (Mink and LeBaron, 1976). The deep aquifer is recharged primarily from infiltration of precipitation and snowfall along the foothills and ridge areas and potentially from the shallow aquifer. Groundwater removal from the aquifer is primarily from the Boise Water Corporation (BWC) for domestic and industrial use. Aquifer studies indicate a transmissivity of approximately 15,750 gallons per day per foot and a storage coefficient of 0.02 (Mink and LeBaron, 1976).

3.4 Surface Water Hydrology

The PSA contains numerous surface water bodies, consisting of canals, sloughs, and laterals that are used for irrigation. The canals and laterals derive their water from the Boise River and flow during the irrigation season, generally between April and October. The canals and laterals are generally dry during the winter with the exception of Finch Lateral which contains water discharged from the Westpark air stripper. The irrigation canals and sloughs are mostly unlined and generally lose water to the shallow aquifer. Occasionally, the water table rises above the elevation of the bottom of the sloughs; the sloughs then act as groundwater drains.

Most stormwater infiltrates in agricultural areas. Excess runoff in commercial and residential areas is collected in storm drains which generally discharge to the sloughs or canals. No lakes or other surface water bodies are present in the PSA.

3.5 Land Uses and Potential Receptors

Land uses within the PSA consist of residential, commercial, and agricultural. The eastern portion of the PSA (the area closest to the Mall) is almost exclusively commercial. Workers (office, construction, and maintenance), shoppers, and visitors (including adults and children) are present at times in the commercial areas. The remainder of the PSA is predominantly residential and agricultural, although some commercial areas exist. Residents (including adults and children), farmers, and office/commercial workers are present in these areas. A more in depth discussion of potential receptors will be included in the PSA Risk Assessment to be submitted at a later date. The commercial areas are expanding rapidly and the agricultural areas are diminishing as new housing projects are built. Water for the commercial areas, new housing areas, and a majority of the older residential areas is supplied by BWC. Wells in the area are mostly used for irrigation and agricultural purposes, although a few wells are used for household and drinking water purposes. One community well, the Bali Hai well, owned by BWC is located approximately 1,000 feet northwest of the PSA. The Bali Hai well is shown on Plate 3.

3.6 Well Inventory

A survey of private wells in the PSA was conducted by the Department between January and May 1992. The results of the survey were summarized by VW&R in the West Boise Well Survey Summary Report (VW&R, 1992). The primary purpose of the survey was to identify the locations of wells in the PSA and to determine their uses and construction. From the compiled survey data and information provided by the Department, 125 wells were identified in the PSA. The wells were used for household uses (e.g., drinking, showering), irrigation, animal watering, lawn and garden watering, and business purposes. The majority of the survey respondents did not know construction details of their wells.

VW&R has connected the majority of well owners who used their wells for potable applications to the Boise Water Corporation Water Supply System. All residents whose wells are completed in PCE-impacted groundwater have been offered the opportunity to connect to BWC water. These connections are being conducted under the Water Supply Order.

4.0 SITE INVESTIGATION

This section summarizes the SI activities conducted in accordance with the Department-approved PSA Work Plan (HLA, 1992b). The PSA work plan is Exhibit 1 to the PSA order. Descriptions and results of each activity have been reported to the Department in previous documents which are referenced herein. SI activities included groundwater sampling to delineate the area where groundwater has been impacted by PCE, surface water sampling, a geophysical pilot study, pilot boring and monitoring/extraction well installation, and data validation. Each of these activities is described in the following sections.

4.1 Project Plans

SI activities were performed in accordance with the PSA Work Plan (HLA, 1992b). Where activities differed from those described in the PSA Work Plan, approval was first received from the Department. Field investigative methods and data evaluation followed procedures detailed in the Quality Assurance Project Plan (QAPP; HLA, 1992d). The QAPP describes the quality assurance and quality control (QA/QC) procedures used to document that the technical data generated during the investigation are accurate, precise, complete, and representative of actual field conditions. A Site Safety Plan detailing health and safety procedures for use during the project was also prepared and followed (HLA, 1991).

4.2 Groundwater Sampling

Groundwater samples have been collected from residential, commercial, extraction, and monitoring wells throughout the PSA during several sampling events. These sampling events include the August 1992 initial groundwater sampling, February 1993 baseline groundwater sampling, ongoing quarterly sampling events, and supplemental sampling in September 1994. A summary of each of these sampling events is presented below. Results obtained from the residential well samples are confidential and are discussed in general terms in this report.

Tables 2 through 4 present the analytical results (detected concentrations only) of all groundwater samples collected during the SI. Addresses of the residential wells have been removed for confidentiality. In addition, Table 2 presents data collected by SRM from the Westpark area since May 1992. May 1992 was chosen to coincide with the first dates of VW&R and HLA sampling events. Plate 2 shows the locations of wells sampled under this program.

4.2.1 Groundwater Sampling Procedures

The sampling procedures used to collect groundwater samples from the residential, commercial, and monitoring wells were a function of well construction and access. In general, residential wells were purged with their installed pumps for a minimum of 5 minutes and until the pH, temperature, and conductivity readings stabilized. Wells that did not contain pumps were purged using either a centrifugal pump or PVC bailer for a minimum of three well volumes or until the well was dry. Samples were then collected either from the access port closest to the wellhead or from the well using a stainless steel bailer. The samples were placed in sample containers appropriate for the requested analyses. The samples were then placed in a cooler at 4 degrees Celsius and sent under chain of custody via overnight courier to Analytical Technologies, Inc. (ATI), Renton, Washington.

4.2.2 August 1992 Groundwater Sampling

To evaluate groundwater chemistry in the PSA, 28 wells were initially sampled between August 19 and 21, 1992. Sampling was conducted in accordance with the Initial Sampling Plan (HLA, 1992a) except that four wells proposed for sampling were not sampled because they were either abandoned or not possible to sample. Other nearby

wells not originally in the sampling program were sampled in lieu of these four wells. All samples were analyzed for VOCs (Table 2) and five samples were analyzed for general mineral and inorganic chemical constituents (Tables 3 and 4) using the EPA Test Methods listed in Table 5.

The results of the initial sampling were originally reported in the Initial Groundwater Sampling Report (HLA, 1992e). PCE was detected in 11 of the 28 well samples at concentrations ranging from 1.6 to 750 $\mu\text{g/l}$. Samples from five of the wells contained PCE concentrations greater than the EPA's maximum contaminant level (MCL) of 5 $\mu\text{g/l}$. These wells were generally toward the center of the PSA. Six samples contained PCE concentrations above the detection limit but below the MCL. Bromodichloromethane, dibromochloromethane, and bromoform were detected in one sample at concentrations ranging from 1.3 to 3.5 $\mu\text{g/l}$. No other VOCs were detected.

The inorganic and general chemistry results indicated that the following parameters were within the range of or below the secondary water quality standard maximum allowable concentrations: pH, foaming agents (MBAS), chloride, iron, manganese, sulfate, total dissolved solids (TDS), and zinc (Department, 1989). The general minerals results from the five wells varied little, indicating similar inorganic water quality in all sampled wells.

4.2.3 February 1993 Groundwater Sampling

To further evaluate the extent of VOCs in groundwater within the PSA and to provide data for establishing baseline concentrations, additional groundwater sampling was conducted in accordance with the Groundwater and Surface Water Sampling and Analysis Plan (HLA, 1993a).

This phase of groundwater sampling was conducted from February 22 through 26, 1993. Samples were collected from residential wells, and SRM and Chen-Northern monitoring wells. Several wells originally proposed for sampling were not sampled because access was not granted, the wells were covered with snow, or

the wells were dry (Table 6). Other nearby wells were sampled, where appropriate. Ten monitoring wells and fifteen residential wells were sampled during this monitoring event. Prior to collection of groundwater samples, the depth to water in the monitoring wells was measured using a water-level meter. Depths to water for the monitoring wells are listed in Table 6. Split samples were obtained by HLA from two Chen-Northern wells and five SRM wells (Table 6). Chen-Northern and SRM provided all necessary equipment and followed their own procedures for purging and sampling. HLA observed purging and sampling activities and provided appropriate laboratory-supplied containers for split samples. All samples were analyzed by ATI for VOCs using EPA Test Method 8010.

The analytical results were originally reported in the January through March 1993 Quarterly Progress Report (HLA, 1993b). PCE was detected in 21 of the 25 well samples at concentrations ranging from 0.2 to 3,100 $\mu\text{g/l}$. Samples from 11 of the wells contained PCE at concentrations greater than the EPA's MCL of 5 $\mu\text{g/l}$. Ten samples contained PCE at concentrations above the detection limit but below the MCL. Samples from three wells contained 1,1,1-trichloroethane (1,1,1-TCA) at concentrations ranging from 0.2 to 0.9 $\mu\text{g/l}$. Chloroform was detected in one sample at a concentration of 0.4 $\mu\text{g/l}$. One sample contained 1,1 dichloroethene (1,1 DCE) at a concentration of 1.2 $\mu\text{g/l}$. Cis-1,2-DCE was detected in five samples at concentrations ranging from 1.2 to 40 $\mu\text{g/l}$. Trichloroethene (TCE) was detected in five samples at concentrations ranging from 0.9 to 13 $\mu\text{g/l}$.

4.2.4 Delineation of the Affected Area

Analytical data from the August 1992 and February 1993 sampling rounds were collectively evaluated to identify the area where PCE concentrations in groundwater exceed the EPA's MCL of 5 $\mu\text{g/l}$. This area is referred to as the Affected Area (Plate 2). A total of 49 data points, including 39 residential wells and 10 groundwater

monitoring wells, were evaluated. The Affected Area boundary line is extrapolated between sampling locations where PCE was not detected and locations where it was detected.

Forty-four residential or commercial wells have been identified in the Affected Area. Of these, 14 are shallow wells (less than 75 feet deep), 11 are deep wells (greater than 75 feet deep), and 19 are unknown depth wells. With the exception of 4 residences, all are connected or will soon be connected to the BWC water supply system. Five residences are currently in the process of being connected to BWC water. The residences not connected to BWC water have declined numerous attempts by VW&R to connect the residence to BWC water.

4.2.5 Quarterly Groundwater Sampling

The boundaries of the Affected Area are re-evaluated quarterly with the collection and analysis of water samples from wells that are known to contain PCE at concentrations above the analytical detection limit but below the MCL of 5 $\mu\text{g/l}$, as well as selected additional wells. The results are reported in quarterly confidential reports to the Department.

4.2.6 Additional Sampling

To further evaluate PCE concentrations in the PSA, eight additional residential wells were sampled on September 28, 1994. One additional well was sampled on November 11, 1994. The samples were analyzed for VOCs by ATI, Renton, Washington. PCE was detected in six of the nine samples at concentrations ranging from not detected ($<0.02 \mu\text{g/l}$) to 390 $\mu\text{g/l}$. TCE was detected in two well samples at concentrations of 0.2 and 1.4 $\mu\text{g/l}$. 1,2 DCE was detected in one well sample at a concentration of 0.7 $\mu\text{g/l}$. No other VOCs were detected. Based on these additional data, the boundaries of the Affected Area near Irving and Mitchell Streets shown on Plate 2 have been moved slightly northward from previously submitted reports.

4.3 Monitoring and Extraction Well Installations

4.3.1 Sunrise Monitoring Well

To monitor the groundwater quality between the Bali Hai community well and the downgradient end of the Affected Area, a monitoring well was installed at 2212 N. Sunrise Avenue between February 22 and 23, 1994. Drilling, sample collection, equipment decontamination, and other field activities were conducted in accordance with the QAPP (HLA, 1992d) and the Soil Boring SAP (HLA, 1993g). The boring for the well was drilled using a hollow stem auger drill rig to a maximum depth of 50 feet. The boring was logged by an HLA geologist using soil cutting samples. The lithologic log showed sand and gravel throughout the boring.

Chemical profiling was performed at 10-foot intervals throughout the boring. Groundwater samples were collected using a Hydropunch™ sampler at depths of 20, 30, 40, and 50 feet. The samples were transported to Alchem Laboratory, Boise, Idaho, where they were analyzed on a 24-hour turnaround basis for halogenated VOCs using EPA Test Method 8010. The analytical results are presented in Table 7. Halogenated VOCs were not detected in any of the Hydropunch™ samples or in the trip blank above the laboratory reporting limit of 0.5 $\mu\text{g/l}$. Based on these analytical results and discussions with the Department, the well was completed to a total depth of 40 feet with a screened interval extending from 20 to 40 feet.

Following well completion, the well was developed by Hiddleston Drilling and Pump by pumping until the purged water was visibly clear and free of sediment. On March 9, 1994, two groundwater samples were collected from the well and an equipment blank collected from the bailer. The samples were shipped to ATI, Renton, Washington, where they were analyzed for halogenated VOCs using EPA Test Method 8010.

The laboratory analytical results indicated that PCE was detected in both well samples at a concentration of 0.3 $\mu\text{g/l}$. Chloroform, a common laboratory contaminant, was detected in the equipment blank at a concentration of 0.4 $\mu\text{g/l}$ but was not detected in either of the well samples. Other VOCs were not detected in the samples nor in the equipment blank. The Sunrise well has been sampled on a quarterly basis along with the residential wells included in the quarterly sampling program. PCE results have ranged from 0.3 to 0.7 $\mu\text{g/l}$.

In May 1994 a transducer and data logger were installed in the well to collect and record water level data necessary to evaluate the impact of pumping the Bali Hai well on the shallow aquifer. Water levels have been reported in the July through September 1994 Quarterly report (HLA, 1994c) and in the October through December 1994 quarterly report (HLA, 1994f). Water levels rose steadily throughout the summer (during the irrigation season). No drawdown was observed that could be related to pumping of the Bali Hai well. Water levels began decreasing rapidly during mid-September and have continued to decline as a result of cessation of irrigation in the vicinity.

4.3.2 Five Mile Road Wells

To gather data to assist in the characterization of geologic and hydrogeologic conditions and to provide information about the vertical distribution of PCE, two monitoring/extraction wells were proposed at the leading edge of the Affected Area. These wells were designed to be suitable for either monitoring or extraction purposes. The scope of work for the N. Five Mile Road well installation program was described in the Soil Boring Sampling and Analysis Plan (HLA, 1993g). One monitoring/extraction well (FMEW-1) has been installed to date (Plate 2). The second monitoring/extraction well is expected to be installed in early 1995. The results of the well installation and sampling were submitted to the Department in a letter dated September 22, 1994 (HLA, 1994b).

The field work was conducted between July 7 and September 20, 1994. Drilling, sample collection, equipment decontamination, and other

field activities were conducted in accordance with the PSA Soil Boring SAP and the QAPP. The wells were drilled and installed under the supervision of HLA and VW&R representatives by Hiddleston Drilling and Pump, Mountain Home, Idaho, using a combination of Hollow Stem Auger (HSA) and Cable Tool drilling techniques. The HSA rig was used to drill the borings for the Hydropunch™ sampling described below. Following sampling, a cable tool rig was used to drill the boring for well installation. The monitoring/extraction well boring was logged by an HLA geologist using soil cuttings and samples collected at five to 10-foot intervals. FMEW-1 was completed to a depth of 65 feet with 50 feet of screen as discussed with the Department. The lithologic logs show, in general, extensive sand and gravel.

Groundwater chemical profiling was performed in the monitoring/extraction well boring in the upper 30 feet of the aquifer. As the boring was advanced, groundwater samples were collected at 10, 20 and 30 feet below ground surface (bgs) using a Hydropunch™ sampler. Collection of groundwater samples from deeper depths was not possible due to the presence of gravel and an inability to drive the Hydropunch™ sampler. These samples were sent under chain of custody to ALCHEM Laboratory, Boise, Idaho, for analysis of halogenated VOCs using EPA Test Method 8010.

Following installation and development of the monitoring/extraction well, the well was sampled. A groundwater sample and duplicate sample were collected on August 15, 1994, following evacuation of at least three well volumes of water from the well. The samples were analyzed by ATI Laboratory, Renton, Washington, for halogenated VOCs using EPA Test Method 8010.

The analytical results for the Hydropunch™ samples and the completed monitoring/extraction well are presented in Table 8. PCE and trichloroethene (TCE) were detected at concentrations of 5.5 and 1.0 $\mu\text{g/l}$, respectively in the 10-foot sample. PCE was

the only compound detected in samples collected from the 20-foot and 30-foot depth intervals. It was detected at concentrations of 2.7 $\mu\text{g/l}$ and 1.6 $\mu\text{g/l}$ in the 20-foot and 30-foot samples, respectively. The Hydropunch™ data was used in conjunction with lithologic data and discussions with the Department to set the bottom of the monitoring/extraction well at approximately 65 feet bgs. PCE was the only compound detected in the two samples collected from the completed monitoring/extraction well. It was detected at concentrations of 1.5 and 1.7 $\mu\text{g/l}$.

4.4 Surface Water Investigation

VW&R conducted a surface water investigation to evaluate the interaction between groundwater and surface water, the potential for surface water contaminant transport; and to develop an understanding of the extent and degree of PCE in the Finch Lateral.

The scope of work for the surface water sampling was originally presented in the *Groundwater and Surface Water Sampling and Analysis Plan, Preliminary Study Area, Boise, Idaho* dated January 4, 1993 (GW/SW SAP; HLA, 1993a). The scope consisted of measuring volumetric flow rates and collecting and analyzing water samples from several stations located along the Finch Lateral (Table 9 and Plate 2). These stations correspond to sampling points established for a similar sampling event conducted by the Department and VW&R in April 1992.

The Finch Lateral sampling was conducted on July 1, 1993, by HLA and VW&R in accordance with the GW/SW SAP and the QAPP. At each station, the lateral was divided into measurement sections so that no greater than 10 percent of the cross sectional area was represented by each section. Flow velocity measurements were made at each section at a depth of 0.6 of the total stream depth using a Marsh-McBirney Model 201 flowmeter and recorded on a data form. Stream discharge was calculated by multiplying the measured flow velocity by the cross-sectional area of the measurement point. The total flow for a section is the sum of each measurement point. Flow volumes calculated for each station using both the July 1993 and the April 1992 data

are presented in Table 9. As shown in Table 9, the July 1993 data indicates that the total discharge at each measurement station along the lateral increased from the most upgradient station (Station 1) to the farthest downgradient station (Station 7), thus indicating a gaining lateral throughout the length measured. The increased discharge along the length of the lateral is likely due to contributions from surface water bodies such as the Ridenbaugh Canal in the vicinity of Station 3, other surface water sources along the Finch Lateral, and groundwater discharge to the lateral. The April 1992 data shows much lower flow rates, as would be expected during the winter/spring prior to the irrigation season. The April 1992 data shows that the lateral is losing water between Stations 4 and 5, 6 and 7, and 7 and 8, and gaining water between the remaining stations (Plate 2; Table 9).

Field parameters including temperature, pH, and conductivity were measured and water samples were collected from mid-stream at each station. Additionally, water samples were collected upgradient of the Westpark discharge pipe (upgradient of Station 1) and from the Ridenbaugh Canal at the Finch Lateral. Samples were transported via overnight courier to ATI, Renton, Washington, and analyzed for halogenated VOCs, using EPA Test Method 8010.

The analytical results for the water samples collected during both the April 1992 and July 1993 sampling events are presented in Table 9. Analytical results for July 1993 indicate that PCE was detected in samples collected from every station at concentrations ranging from 0.8 to 4.8 $\mu\text{g/l}$. The highest concentration of PCE was detected in the sample collected from Station 3, directly downgradient of the Finch Lateral intersection with the Ridenbaugh Canal. Concentrations generally decreased downgradient of Station 3. The sample collected from Station 1 (at the Westpark air stripper discharge) contained 1.5 $\mu\text{g/l}$ PCE. The water sample collected from the groundwater seep (Station 2) contained PCE at a concentration of 0.8 $\mu\text{g/l}$. Target

compounds (including PCE) were not detected in the samples collected upgradient of Station 1 and from the Ridenbaugh Canal. PCE concentrations detected in samples collected during April 1992 were similar to those collected in July 1993.

Based on data collected during the surface water sampling activities in both April 1992 and July 1993, water containing low levels of dissolved PCE may be entering the lateral via Westpark's air stripper discharge pipe and groundwater between Stations 2 and 4.

4.5 Geophysical Pilot Study

A seismic reflection pilot study was conducted during April 1993. The objective of the study was to gather preliminary data to assist in the characterization of hydrogeologic conditions at the site. The preliminary data would be used, as necessary, to design a full-scale geophysical investigation. The scope of work for the geophysical pilot study was described in the *Supplemental Pilot Boring Sampling and Analysis Plan, Boise Towne Square Mall, Boise, Idaho* dated February 9, 1993. The results of the geophysical pilot study were presented in the *Geophysical Sampling and Analysis Plan* dated May 6, 1993 (HLA, 1993c).

The pilot study was conducted at three locations (two at the Mall and one at 1941 Five Mile Road in the PSA) during the week of April 12, 1993. The results of the pilot study conducted at the Mall were reported in the Mall SI/RAP (HLA, 1994e). Seismic reflection testing was performed using an EG&G Geometrics Model ES-2401 exploration seismograph and 48 groups of Mark Products, L28E geophones spaced at 2-foot intervals. Two seismic energy sources were utilized during the test: a 16-pound sledge hammer striking an aluminum plate placed on the ground and a 12-gauge, 165 grain blank shotgun shell percussion rod placed at an approximate depth of 1.5 feet below ground. During data collection activities, filters were used to evaluate optimum recording parameters.

Results of the seismic reflection pilot study performed along N. Five Mile Road suggest a series of strong reflectors beginning at an approximate depth of 150 feet. A weak reflector

is suggested at an approximate depth of 100 feet. A reflecting horizon represents a change in lithology. A strong reflector may indicate the presence of a clay layer whereas a weak reflector may represent a more subtle change in lithology such as from a coarse sand to a fine sand.

4.6 Decontamination and Waste Handling

To minimize the potential of cross-contamination, all drilling and sampling equipment used during each phase of the SI was decontaminated prior to and after use. Drilling equipment was steam cleaned prior to transport to the site and after drilling each boring. The soil and water sampling equipment was steam cleaned or washed in a low-phosphorous soap solution and double rinsed with water. All decontamination procedures were done in a manner which precluded a release of the cleaning solution to the environment.

Soil cuttings produced during drilling were contained in covered roll-off bins. Water produced during well development, sampling, and drilling was contained in a Baker tank or in drums. The containers were stored onsite pending receipt of laboratory analytical data and approval for receipt by a licensed hazardous waste disposal facility.

4.7 Data Validation

Data validation was performed on all HLA and VW&R field and laboratory quality control (QC) samples. The validation results of individual field sampling events have been reported in previous referenced documents. A description of QA/QC methods is provided below. Not all QA/QC procedures were required during every sampling activity. Where the data validation process indicated problems with either the field or laboratory QC, samples have been qualified accordingly in the database.

4.7.1 Field Quality Control

The field QC samples generally consisted of one or a combination of trip blanks, equipment blank, field blanks, and duplicate samples.

Trip blanks are prepared by the analytical laboratory and consist of organic-free deionized water in laboratory-prepared sample containers; they are not decanted from their original containers until final laboratory analysis. Trip blanks are used to detect potential contamination introduced through field or laboratory procedures; blanks are taken to the field and subjected to storage and transport conditions that are the same as those for groundwater samples.

Field blanks consist of organic-free deionized water poured into sample containers under field conditions. Field blanks are used to check for potential contamination during sample preparation in the field.

Equipment blanks consist of organic-free deionized water that is rinsed through decontaminated field sampling equipment and then poured into sample containers under field conditions. Equipment blanks are used to check for contamination resulting from inadequate decontamination procedures.

Duplicate samples are used to evaluate analytical laboratory precision. Precision is assessed by calculating the relative percent difference (RPD) between the initial sample result (X_1) and the duplicate sample result (X_2), as follows:

$$RPD = \frac{|X_1 - X_2|}{(X_1 + X_2)/2} \times 100$$

A low RPD indicates high precision.

4.7.2 Laboratory Quality Control

The laboratory quality control data consists of surrogate recoveries and blank spike recoveries.

Surrogate samples are prepared by the laboratory by adding surrogate compounds to field samples. Surrogate recovery goals were set in the QAPP (HLA, 1992c).

A blank spike is prepared in the laboratory by adding known amounts of target analytes to a field sample before laboratory preparation to simulate the matrix effect in analyses of field samples. Percent recoveries are calculated for these target analytes as measures of the accuracy of the total analytical method. The spiked samples may also be analyzed in duplicate for an assessment of the analytical method. Blank spike recovery goals were set in the QAPP.

4.7.3 Overall Completeness

The data completeness value is a comparison of the number of data that meet QAPP accuracy and precision goals with the number of data that are expected to meet these goals. This value is calculated as follows:

$$C = \frac{V}{T} \times 100$$

where:

- C = percentage of complete data for a parameter
- V = number of valid results for a parameter (results that are within the acceptance criteria)
- T = total number of sample results generated by a laboratory for a parameter.

4.7.4 Summary of Data Validation

All of the data generated by HLA and VW&R during this site investigation have been validated in accordance with procedures described in the QAPP. Where appropriate, samples have been qualified in the database. Several samples have been qualified as estimated due to noncompliance with sample holding time criteria specified in the QAPP. Samples collected by other parties (e.g., SRM data) have been qualified with a C1 indicating that they were not collected by

HLA and/or VW&R. No samples were qualified as rejected. Therefore, the data are considered to be accurate and precise and comply with the overall completeness criteria specified in the QAPP.

5.0 PROPOSED INTERIM REMEDIAL MEASURES

Based on the concentrations of PCE detected in groundwater at the downgradient end of the Affected Area, VW&R has proposed to implement interim remedial measures (IRM) to inhibit the further downgradient migration of PCE-containing groundwater. VW&R submitted an IRM Work Plan to the Department on September 5, 1994 (VW&R, 1994); the Department approved the Work Plan. The proposed IRM includes the installation and operation of a groundwater extraction and treatment system.

The extraction system will consist of the two extraction/monitoring wells located along N. Five Mile Road and installed as part of the Soil Boring Sampling and Analysis Plan scope of work described in Section 4.3.2. The wells will be used as groundwater extraction points to create a hydraulic barrier at the leading edge of the Affected Area.

Four monitoring wells were proposed for installation and will be used to monitor groundwater quality conditions and will provide data to evaluate the effectiveness of the IRM. Two monitoring wells were installed during the field program for the installation of the monitoring/extraction well FMEW-1 described in Section 4.3.2. The locations of the installed wells and proposed wells are shown on Plate 3. The monitoring wells were installed in accordance with the IRM Work Plan (VW&R, 1994) and the QAPP (HLA, 1992d). The wells were installed by Hiddleston Drilling and Pump using hollow stem auger drilling techniques. The wells were completed to a depth of 40 feet bgs. The wells will be sampled once the remaining two monitoring wells are installed (following receipt of an access agreement).

An aquifer test will be conducted using one or more of the new wells to evaluate the optimum pumping rates for the system, evaluate the hydraulic characteristics of the aquifer, and provide the data necessary to predict the capture zone resulting from the various pumping rates.

The groundwater treatment system will be located near the extraction wells and will consist of VOC-removing vessels containing carbonaceous adsorbent. Following removal of the VOCs, treated groundwater is anticipated to be discharged to the Sergeant Drain, approximately one-half mile north of the northernmost extraction well in accordance with requirements of a NPDES discharge permit.

Access negotiations are continuing with property owners to site the treatment system and install one of the remaining two monitoring wells. Access for installation of one monitoring well and one extraction/monitoring well has been obtained; drilling is scheduled for late January 1995. VW&R anticipates system startup during the summer of 1995, provided that access to property is granted by the owners.

6.0 DISCUSSION

This section describes the site geology and hydrogeology and presents a discussion of the nature and extent of VOCs based on the findings of the SI.

6.1 Site Geology and Hydrogeology

6.1.1 Lithologies

Information regarding the stratigraphy at the downgradient portion of the PSA was obtained from soil borings drilled during installation of the Sunrise Well, FMEW-1, and FMMW-1 and -2; review of the Bali Hai well log (Plate 4); and from the geophysical seismic reflection survey conducted during April 1993 (HLA, 1993c). Information regarding the stratigraphy in the Westpark area was obtained from the SRM RAP (SRM, 1989).

The northwestern portion of the PSA, in general, consists of 5 feet of silty sand or sandy silt underlain by 30 to 35 feet of sandy gravel. The sandy gravel is underlain by silty sand to an approximate depth of 135 feet bgs. According to the Bali Hai well log, 75 feet of "blue" clay is present at an approximate depth of 135 feet. Results of the HLA seismic reflection survey indicated the presence of a strong reflector at an approximate depth of 150 feet. A strong reflector may indicate the presence of a clay layer. The seismic reflection data coupled with the Bali Hai well log would suggest that the layer of "blue" clay may be present in the vicinity of FMEW-1 at an approximate depth of 150 feet.

The shallow stratigraphy in the Westpark area is similar to the stratigraphy in the northwestern portion of the PSA and, in general, consists of 5 feet of clay or silty sand, underlain by 30 to 35 feet of sandy gravel or gravelly sand. Silty sand is present beneath the gravels at an approximate depth of 35 to 40 feet.

6.1.2 Groundwater Conditions

Water levels measured in wells in the PSA reflect regional trends. In general, depth to water ranges from approximately 10 to 15 feet bgs during the irrigation season (April to October) to 15 to 20 feet bgs during the nonirrigation season (November to March). Groundwater flow directions and gradients calculated by SRM for the Westpark area indicate that groundwater flows toward the northwest at an approximate gradient of 0.002 (SRM, 1989). This gradient and flow direction is consistent with the findings by VW&R and HLA for the Mall (HLA, 1994e) and with regional trends.

Data collected from the transducer installed in the Sunrise monitoring well indicates that pumping of the Bali Hai well appears to have no discernable impact on water levels in the shallow aquifer (HLA, 1994c).

An average flow rate for groundwater in the PSA was calculated using the following equation:

$$V_s = \frac{Ki}{N_e}$$

where:

V_s = seepage velocity
 K = hydraulic conductivity
 i = gradient
 N_e = effective porosity

Using the average value for hydraulic conductivity obtained by SRM of 1,273 gpd/ft² (SRM, 1989), an effective porosity for sand of 22 percent, and a gradient of 0.002 ft/ft, a groundwater velocity of 11.57 gpd/ft² or 1.55 ft/day was calculated. However, organic chemicals such as PCE typically travel at a rate somewhat less than groundwater due to factors such as solute retardation, hydrodynamic dispersion, and adsorption. The hydrodynamics of the shallow aquifer will be further evaluated

during implementation of the IRM described in Section 5.0.

6.2 Nature of VOCs

Eleven halogenated VOCs have been detected in groundwater and surface water samples collected during the SI. The compounds detected include: Bromodichloromethane; bromoform; chloromethane; chloroform; cis-1,2 dichloroethene (cis-1,2-DCE); PCE; 1,1,1 trichloroethane (1,1,1-TCA); TCE; 1,2 dichloroethane (1,2-DCA); 1,1 dichloroethene (1,1-DCE); and trichlorofluoromethane. Bromodichloromethane and bromoform were each detected once in the same well sample at concentrations of 1.3 and 3.4 $\mu\text{g/l}$, respectively. These compounds have not been detected in any other well samples. Chloroform was detected in three samples (two monitoring well samples and one field blank) at concentrations ranging from 0.2 to 2.8 $\mu\text{g/l}$. Bromodichloromethane, bromoform, and chloroform are all trihalomethane compounds which are common byproducts of chlorination. The monitoring well and field blank samples were all collected utilizing a bailer which could have been decontaminated with water that may have contained chlorine. The one domestic well containing bromodichloromethane and bromoform could have been chlorinated to kill bacteria. The detected concentrations are two orders of magnitude below the total trihalomethanes MCL of 100 $\mu\text{g/l}$. The total trihalomethanes MCL includes four compounds: bromodichloromethane, bromoform, chloroform, and dibromochloromethane.

Chloromethane was detected in one private well sample at a concentration of 16 $\mu\text{g/l}$, and has not been detected in any other well samples. Chloromethane is commonly used during soil fumigation. No MCL currently exists for chloromethane.

1,1,1-TCA has been detected in three wells: in four samples from one residential well at concentrations ranging from 0.2 to 0.4 $\mu\text{g/l}$, and once each in samples from Chen-Northern Well MW-9 (0.4 $\mu\text{g/l}$) and SRM Well MW-11 (0.9 $\mu\text{g/l}$). 1,1,1-TCA is a common solvent used during degreasing activities. Trichlorofluoromethane has

been detected during three sampling events in each of two residential wells at concentrations ranging from 0.5 to 0.9 $\mu\text{g/l}$. Trichlorofluoromethane is a common refrigerant.

1,1-DCE was detected in Chen Well MW-1 at a concentration of 1.2 $\mu\text{g/l}$, and was not detected in any other wells. Cis-1,2 DCE was detected in three well samples (one residential well and two SRM monitoring wells) at concentrations ranging from 0.7 $\mu\text{g/l}$ to 1.4 $\mu\text{g/l}$. TCE has been detected in one or more samples collected from 15 residential and monitoring wells. TCE, 1,1-DCE, and 1,2-DCE are transformation byproducts of PCE.

Of the chemicals detected in surface water and groundwater collected in the PSA, PCE has been chosen as the primary chemical of concern based on the former VW&R facility history, frequency of detection, areal distribution, and concentration.

6.3 Occurrence of VOCs in Surface Water

Analytical results from the April 1992 and July 1993 sampling of the Finch Lateral showed similar results. Surface water samples collected upstream of the Westpark air stripper discharge did not contain detectable concentrations of VOCs. Directly downstream of the Westpark air stripper discharge point (Station 1) surface water samples contained PCE at concentrations of 1.5 and 1.85 $\mu\text{g/l}$, indicating that PCE is entering the Finch Lateral via the Westpark air stripper discharge water. PCE concentrations then decrease slightly at Emerald Road (Station 2) to 0.67 and 0.8 $\mu\text{g/l}$. Groundwater has been observed entering the lateral via a groundwater seep at Emerald road. The decreasing PCE concentrations between Stations 1 and 2 are likely due to 1) volatilization of the PCE out of the water derived from the air stripper discharge, and 2) dilution of the PCE from groundwater entering the lateral. The intersection of the lateral with Emerald Road is slightly south of the Affected Area, defined as the area within

the PSA where PCE concentrations in groundwater are greater than the MCL of 5 $\mu\text{g/l}$ established by the USEPA. PCE concentrations in groundwater outside the Affected Area are less than 5 $\mu\text{g/l}$ (Plate 2). The highest concentrations of PCE were detected at Station 3, Finch Lateral at the Ridenbaugh Canal. PCE concentrations detected during the April 1992 and July 1993 sampling events were 6.89 and 4.8 $\mu\text{g/l}$, respectively. The detected PCE is most likely due to the introduction of PCE-impacted groundwater to the lateral. Station 3 is located in the approximate midsection of the Affected Area. Concentrations of PCE then decrease throughout the remainder of the length of the lateral. In April 1992, the lateral was a losing stream from Stations 5 through 8; therefore, the decreasing concentrations may be attributed to volatilization of the PCE out of the surface water. In July 1993, the lateral gained water throughout the length sampled. The decrease in concentrations of PCE may be attributed to dilution due to introduction of additional surface water, groundwater containing lower or nondetectable PCE concentrations entering the lateral, and/or volatilization of PCE out of the surface water.

Because the volumetric rates of flow from the numerous pipes discharging water to the lateral were not measured, the percent of increased stream discharge due to introduction of groundwater cannot be estimated. PCE concentrations detected at the farthest downstream point sampled (Station 8; Finch Lateral at Fairview) are several orders of magnitude lower than PCE concentrations detected in the nearest groundwater well. Concentrations of PCE farther downstream likely continue to decrease. These concentrations are far below the EPA's National Ambient Water Quality Criteria to protect freshwater aquatic life toxicity values for acute and chronic exposures (5,280 and 840 $\mu\text{g/l}$, respectively). The concentrations detected at the farthest downstream point are also well below the MCL of 5 $\mu\text{g/l}$ for PCE, and are lower than groundwater concentrations detected in that area.

6.4 Occurrence of VOCs in Groundwater

6.4.1 Areal Distribution

VW&R has collected one or more groundwater samples from 60 wells throughout the PSA. The areal distribution of the wells is sufficient to delineate the extent of VOCs in groundwater in the PSA. To illustrate the areal extent of PCE-impacted groundwater, isoconcentration contours are presented on Plate 2.

In addition, Plate 2 divides the PSA into four areas based on current and future land uses and PCE concentrations detected in groundwater. These areas are described below and will be discussed further in the risk assessment. Studies performed in Area 1, the Mall, were reported in the Mall SI/RAP (HLA, 1994e).

Area 2 is directly west of the Mall property and is generally bounded by Westpark Drive to the south, Finch Lateral to the west, Emerald Road to the north, and the Mall to the east (Plate 2). Land uses in Area 2 are entirely commercial or soon to be commercial. Nine monitoring wells and one commercial well used for irrigation were sampled in Area 2. As shown on Plate 2, PCE concentrations in Area 2 range from 5 $\mu\text{g/l}$ to greater than 1,000 $\mu\text{g/l}$, with the majority of Area 2 averaging approximately 500 $\mu\text{g/l}$.

Area 3 is the area downgradient of the Westpark area (Area 2) and is mostly residential with some commercial land uses. Area 3 has been subdivided into subareas 3A and 3B based on PCE concentrations detected during the SI (Plate 2). PCE concentrations detected in three wells in Area 3A range from 130 $\mu\text{g/l}$ to 750 $\mu\text{g/l}$, although the average PCE concentration is approximately 264 $\mu\text{g/l}$. A total of four private wells exist in Area 3A; all residences have been connected to the BWC water supply system and no longer use their well water for drinking water purposes. Area 3A is east of the Finch Lateral. The lateral may be acting as a groundwater divide

by discharging water from the lateral to groundwater (when groundwater levels are below the bottom of the lateral), thus creating a mounding effect beneath the lateral. As a result, PCE in groundwater may be channeled in a more northerly direction than the usual northwest flow direction. The depth of this influence is not known. Additional data is required to further evaluate the effect of the lateral on the areal distribution of PCE.

Area 3B is the area downgradient of Area 3A within the Affected Area (Plate 2). Ten wells were sampled in Area 3B during the SI. Detected PCE concentrations range from 1.6 to 32.5 $\mu\text{g/l}$, with an average of 6.1 $\mu\text{g/l}$. A total of 40 private wells have been identified in Area 3B. Of the 40 wells, 36 are connected to the BWC water supply system. The owners of the remaining four wells have declined hookup offers.

Area 4 is the area outside the Affected Area. A total of 36 wells were sampled in Area 4. PCE concentrations ranged from not detected ($<0.2 \mu\text{g/l}$) to 2.5 $\mu\text{g/l}$.

As discussed above and as shown on Plate 2, the highest concentration of PCE is present in Area 2. PCE concentrations in the PSA decrease with distance from the Mall, with significantly lower concentrations (2 orders of magnitude) detected in wells installed along Five Mile Road in Area 3B.

6.4.2 Vertical Distribution

The vertical distribution of PCE was evaluated primarily using data generated during installation of the monitoring/extraction well on Five Mile Road, coupled with data generated during the Mall investigation. Although data exists from

numerous deep wells in the Affected Area, the depths at which water is pumped from the wells is generally unknown. The screened intervals from the deep wells are also mostly unknown. According to the well survey completed by the Department, only two deep wells sampled in the Affected Area have known screen intervals. One well has a total depth of 180 feet and is screened from 40 to 180 feet. The depth of the pump is unknown. Another well has a total depth of 168 feet and is screened from 148 to 168 feet. Both of these wells contain PCE. The 168 foot well is pumped extensively and likely is drawing the PCE from shallower depths into the well. The 180 foot well may be pumping water from a much shallower depth since the well screen extends from a depth of 40 feet.

Hydropunch sampling during installation of Well FMEW-1 indicated that PCE concentrations were highest in the shallowest sample (5.5 $\mu\text{g/l}$), and decreased to 1.6 $\mu\text{g/l}$ at 30 feet bgs. The data generated at the Mall indicated that PCE is limited to the upper 75 feet below ground surface at the downgradient edge of the Mall property (HLA, 1994e). Therefore, it appears that PCE is mostly limited to the upper portion of the shallow aquifer except where extensive pumping of deeper wells is drawing PCE to deeper depths.

7.0 SUMMARY AND CONCLUSIONS

This section summarizes the principal findings of the SI in terms of site geology and hydrogeology, groundwater quality, and surface water quality.

7.1 Site Geology and Hydrogeology

Based on the integration of all the data available from project-specific borings, logs of nearby wells, and a review of the regional geology, the geology and hydrogeology at the site may be summarized as follows:

- The stratigraphy in the northwestern portion of the site generally consists of approximately 5 feet of silty sand or sandy silt underlain by 30 to 35 feet of sandy gravel. The sandy gravel is underlain by silty sand to an approximate depth of 135 feet. According to the Bali Hai well log (Plate 4), approximately 75 feet of "blue" clay underlies the silty sand.
- According to boring logs generated by SRM, the shallow stratigraphy in the Westpark area is similar to the stratigraphy in the northwestern portion of the PSA and, in general, consists of five feet of clay or silty sand underlain by 30 to 35 feet of sandy gravel or gravelly sand. Silty sand is present beneath the gravels to an approximate depth of 35 to 40 feet.
- Seismic reflection survey results suggest the presence of a low permeability layer (e.g., clay) at an approximate depth of 150 feet bgs near 1941 N. Five Mile Road.
- The shallow aquifer beneath the site is unconfined. Groundwater levels fluctuate during the irrigation season. In general, depth to water ranges from approximately 10 to 15 feet bgs during the irrigation season, and from approximately 15 to 20 feet bgs during the nonirrigation season.
- The canals and laterals generally discharge water to the shallow groundwater except when (during the irrigation season) the water

table rises above the bottom of the laterals; the laterals then act as groundwater drains.

- The laterals may influence local groundwater flow directions by creating a groundwater divide where mounding has resulted from surface water discharging to groundwater. The depth of this influence is not known.
- Pumping of the Bali Hai well appears to have little to no impact on water levels in the shallow aquifer.
- Groundwater flows toward the north-northwest at a gradient of 0.002 and at a velocity of approximately 1.55 feet/day.

7.2 Groundwater Quality

The following summary of groundwater quality conditions is based on data collected during the SI and by VW&R and its representatives or other parties (i.e., the Department and SRM).

- The sample results obtained from wells within the PSA and analyzed for general minerals (e.g., pH, alkalinity, total dissolved solids) indicated similar inorganic water quality across the site.
- Eleven halogenated VOCs have been detected in groundwater samples collected during the SI. PCE has been chosen as the primary chemical of concern based on the frequency of detection, history of the former VW&R facility, areal distribution, and concentration.
- PCE has been detected in groundwater in a narrow shaped plume that extends from the Mall to N. Five Mile Road.
- The concentrations of PCE in groundwater are the highest in the

Westpark area, directly downgradient of the Mall, and decrease toward the northwest (downgradient).

- PCE appears to be concentrated in the upper portion of the shallow aquifer, except where extensive pumping has occurred (e.g., community wells supplying numerous households). Where PCE has been detected in deep wells (greater than 75 feet), well construction details are generally unknown, and conduits may be present.

7.3 Surface Water Quality

- PCE is the only VOC detected in surface water samples collected from the Finch Lateral.
- PCE was not detected in surface water samples collected upstream of where the Westpark air stripper discharge pipe enters the Finch Lateral.
- The highest concentrations of PCE were detected in the vicinity of the Ridenbaugh Canal, within the Affected Area, and suggest that PCE-impacted groundwater may be entering the lateral.
- Concentrations decrease downstream, suggesting mixing with surface water discharging to the lateral, volatilization of the PCE, and/or discharge of groundwater containing lower concentrations of PCE into the lateral.

7.4 Data Gaps

Although the areal extent of PCE-impacted groundwater has been defined, the boundaries of Area 3A are not well defined due to the paucity of wells in the area. Additional wells and sampling points are required to further delineate the extent of Area 3A. Impacts, if any, that the

Finch Lateral may have on the groundwater flow system and distribution of PCE in the vicinity of Area 3A is not well understood. Installation of piezometers near the lateral will allow collection of groundwater levels to aid in the evaluation of whether the lateral acts as a groundwater divide. Collection of additional groundwater samples in the area will also aid in the evaluation of the impact of the lateral on PCE distribution. The geology near the northwest boundary of Area 2 will also be further evaluated to assess whether geologic differences could contribute to the distribution of PCE in Area 3A. A Phase II Work Plan for proposed additional work to eliminate these data gaps is being submitted to the Department concurrently with this report.

It appears that PCE is mostly limited to the upper portion of the shallow aquifer except where deep wells have been pumped extensively. Although some questions remain regarding well construction details of the deep wells and unknown depth wells within the Affected Area, these wells will be evaluated under the Water Supply Order. Authorization forms have been sent to well owners within the Affected Area requesting access to the wells for sampling and evaluation using downhole geophysics and TV cameras. Once construction details are obtained for the wells, options (e.g., well abandonment, well replacement, no action) will be evaluated and recommendations made to the Department.

Site-specific aquifer characteristics will be evaluated during implementation of the IRM.

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TABLES

Table 1. Results of Chemical Analyses for VOCs in Groundwater, SRM Wells
VW&R PSA SI/RA Report

Location	Sample Date	Test Method	cis-1,2-Dichloro ethene	Tetrachloro ethylene	1,1,1-Trichloro ethane	Trichloro ethene
SRM MW-09						
	10/01/89	601	--	1000.00 C1	--	--
	4/01/90	601	--	1090.00 C1	--	--
	6/01/90	601	--	763.00 C1	--	--
	10/01/90	601	--	850.00 C1	--	--
D	10/01/90	601	--	980.00 C1	--	--
	2/05/91	601	--	1040.00 C1	--	12.10 C1
	5/16/91	601	--	910.00 C1	--	5.40 C1
	8/01/91	601	--	960.00 C1	--	5.60 C1
	11/01/91	601	--	714.00 C1	--	4.30 C1
	2/01/92	601	--	360.00 C1	--	1.70 C1
D	2/01/92	601	--	340.00 C1	--	1.90 C1
	5/01/92	601	--	190.00 C1	--	0.90 C1
	8/01/92	601	--	130.00 C1	--	1.10 C1
	2/01/93	601	--	1170.00 C1	--	8.40 C1
	5/25/93	601	--	1680.00 C1	--	9.20 C1
D	5/25/93	601	--	1440.00 C1	--	9.40 C1
	8/25/93	601	--	1380.00 C1	--	7.70 C1
D	8/25/93	601	--	1420.00 C1	--	7.80 C1
	11/23/93	601	--	1070.00 C1	--	6.90 C1
D	11/23/93	601	--	1060.00 C1	--	6.90 C1
	2/01/94	601	--	610.00 C1	--	--
SRM MW-10						
	2/25/93	8010	< 0.20	0.50	< 0.20	< 0.20
SRM MW-11						
	10/01/89	601	--	15.60 C1	--	--
	4/01/90	601	--	3.60 C1	--	--
D	4/01/90	601	--	4.00 C1	--	--
	7/01/90	601	--	5.90 C1	--	--
	10/01/90	601	--	5.10 C1	--	--
	2/05/91	601	--	2.60 C1	--	< 0.50
	5/15/91	601	--	4.80 C1	--	< 0.50
	8/01/91	601	--	7.50 C1	--	< 0.50
	11/01/91	601	--	5.60 C1	--	< 0.50
	8/01/92	601	--	11.20 C1	--	< 0.50
	2/01/93	601	--	1.70 C1	--	< 0.50
	2/25/93	8010	< 0.20	0.80	0.90	< 0.20
	5/25/93	601	--	0.90 C1	--	< 0.50
	8/25/93	601	--	3.50 C1	--	< 0.50 C1

Notes:

All concentrations reported in micrograms per liter (µg/L).
 < indicates value was not detected at or above stated detection limit.
 Dashes (--) indicate that no analysis performed for this entry.
 D indicates a duplicate sample.
 Qualifiers:
 C1: Indicates sampling performed by organization other than HLA.

Table 1. Results of Chemical Analyses for VOCs in Groundwater, SRM Wells
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Location	Sample Date	Test Method	cis-1,2-Dichloro ethene	Tetrachloro ethylene	1,1,1-Trichloro ethane	Trichloro ethene
SRM MW-14	8/01/91	601	--	< 0.50	--	< 0.50
	11/01/91	601	--	< 0.50	--	< 0.50
SRM MW-16	10/01/89	601	--	183.00 C1	--	--
	4/01/90	601	--	176.00 C1	--	--
	7/01/90	601	--	109.00 C1	--	--
	10/01/90	601	--	50.00 C1	--	--
	2/05/91	601	--	13.20 C1	--	< 0.50
	5/15/91	601	--	39.00 C1	--	< 0.50
	8/01/91	601	--	116.00 C1	--	0.70 C1
	11/01/91	601	--	79.20 C1	--	< 0.50
	2/01/92	601	--	113.00 C1	--	1.10 C1
	5/01/92	601	--	100.00 C1	--	0.80 C1
	8/01/92	601	--	100.00 C1	--	1.40 C1
	5/25/93	601	--	270.00 C1	--	1.90 C1
	8/25/93	601	--	700.00 C1	--	5.20 C1
	11/23/93	601	--	550.00 C1	--	3.90 C1
	2/01/94	601	--	390.00 C1	--	--
SRM MW-18	10/01/89	601	--	190.00 C1	--	--
	4/01/90	601	--	74.90 C1	--	--
	7/01/90	601	--	145.00 C1	--	--
	7/01/90	601	--	205.00 C1	--	--
	10/01/90	601	--	170.00 C1	--	--
	2/05/91	601	--	81.50 C1	--	< 0.50
	2/05/91	601	--	78.60 C1	--	< 0.50
	2/05/91	601	--	80.70 C1	--	< 0.50
	5/15/91	601	--	50.00 C1	--	< 0.50
	8/01/91	601	--	71.00 C1	--	< 0.50
	11/01/91	601	--	30.20 C1	--	< 0.50
	11/01/91	601	--	30.20 C1	--	< 0.50
	2/01/92	601	--	31.50 C1	--	< 0.50
	5/01/92	601	--	17.00 C1	--	< 0.50
	8/01/92	601	--	15.40 C1	--	< 0.50
	8/01/92	601	--	12.00 C1	--	< 0.50
	2/01/93	601	--	4.90 C1	--	< 0.50
	5/25/93	601	--	3.40 C1	--	< 0.50
	8/25/93	601	--	5.70 C1	--	< 0.50 C1
	11/23/93	601	--	4.10 C1	--	< 0.50 C1
	2/01/94	601	--	3.40 C1	--	--
SRM MW-19	10/01/89	601	--	1.50 C1	--	--
	4/01/90	601	--	1.10 C1	--	--
	7/01/90	601	--	< 1.00	--	--
	10/01/90	601	--	< 0.50	--	--
	2/05/91	601	--	< 0.50	--	< 0.50

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Location	Sample Date	Test Method	cis-1,2-Dichloro ethene	Tetrachloro ethylene	1,1,1-Trichloro ethane	Trichloro ethene
SRM MW-19	5/16/91	601	--	< 0.50	--	< 0.50
	8/01/91	601	--	< 0.50	--	< 0.50
	11/01/91	601	--	< 0.50	--	< 0.50
	8/01/92	601	--	< 0.50	--	< 0.50
	2/01/93	601	--	< 0.50	--	< 0.50
	2/25/93	8010	< 0.20	< 0.20	< 0.20	< 0.20
	8/25/93	601	--	< 0.50 C1	--	< 0.50 C1
	11/23/93	601	--	< 0.50 C1	--	< 0.50 C1
SRM MW-20	10/01/89	601	--	9.50 C1	--	--
	4/01/90	601	--	22.50 C1	--	--
	10/01/90	601	--	50.00 C1	--	--
	2/05/91	601	--	9.90 C1	--	< 0.50
	5/15/91	601	--	1.80 C1	--	< 0.50
	8/01/91	601	--	0.60 C1	--	< 0.50
	11/01/91	601	--	1.80 C1	--	< 0.50
	8/01/92	601	--	9.40 C1	--	< 0.50
SRM MW-21	8/25/93	601	--	0.50 C1	--	< 0.50 C1
	4/01/90	601	--	44.90 C1	--	--
	7/01/90	601	--	30.80 C1	--	--
	10/01/90	601	--	17.20 C1	--	--
	2/05/91	601	--	50.70 C1	--	< 0.50
	5/15/91	601	--	134.00 C1	--	0.70 C1
	8/01/91	601	--	48.00 C1	--	< 0.50
	11/01/91	601	--	39.70 C1	--	< 0.50
	2/01/92	601	--	85.00 C1	--	0.60 C1
	5/01/92	601	--	310.00 C1	--	1.30 C1
	D 5/01/92	601	--	380.00 C1	--	1.30 C1
	8/01/92	601	--	70.00 C1	--	< 0.50
	2/01/93	601	--	740.00 C1	--	4.40 C1
	D 2/01/93	601	--	720.00 C1	--	4.50 C1
	2/25/93	8010	< 10.00	450.00	< 10.00	< 10.00
	D 2/25/93	8010	1.20	610.00	< 0.20	2.60
	5/25/93	601	--	1050.00 C1	--	6.10 C1
	8/25/93	601	--	470.00 C1	--	1.20 C1
	11/23/93	601	--	540.00 C1	--	1.70 C1
	2/01/94	601	--	900.00 C1	--	--
SRM WP-01	D 2/01/94	601	--	1060.00 C1	--	--
	10/01/89	601	--	1100.00 C1	--	--
	3/01/90	601	--	800.00 C1	--	--
	D 3/01/90	601	--	920.00 C1	--	--
	D 3/01/90	601	--	980.00 C1	--	--
	D 3/01/90	601	--	585.00 C1	--	--
D	3/01/90	601	--	876.00 C1	--	--

Table 1. Results of Chemical Analyses for VOCs In Groundwater, SRM Wells
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Location	Sample Date	Test Method	cis-1,2-Dichloro ethene	Tetrachloro ethylene	1,1,1-Trichloro ethane	Trichloro ethene
SRM WP-01						
	4/01/90	601	--	379.00 C1	--	--
D	4/01/90	601	--	285.00 C1	--	--
D	4/01/90	601	--	212.00 C1	--	--
D	4/01/90	601	--	239.00 C1	--	--
D	4/01/90	601	--	300.00 C1	--	--
D	4/01/90	601	--	408.00 C1	--	--
	6/01/90	601	--	330.00 C1	--	--
	7/01/90	601	--	290.00 C1	--	--
D	7/01/90	601	--	290.00 C1	--	--
	10/01/90	601	--	660.00 C1	--	--
D	10/01/90	601	--	660.00 C1	--	--
	2/06/91	601	--	726.00 C1	--	3.20 C1
D	2/06/91	601	--	428.00 C1	--	1.60 C1
	5/16/91	601	--	290.00 C1	--	1.90 C1
	8/01/91	601	--	660.00 C1	--	3.20 C1
	11/01/91	601	--	654.00 C1	--	4.10 C1
	2/01/92	601	--	340.00 C1	--	1.60 C1
	5/01/92	601	--	580.00 C1	--	2.30 C1
	8/01/92	601	--	300.00 C1	--	2.20 C1
	2/01/93	601	--	73.00 C1	--	< 0.50
	5/28/93	601	--	170.00 C1	--	1.30 C1
	8/27/93	601	--	300.00 C1	--	1.30 C1
	11/23/93	601	--	290.00 C1	--	2.10 C1
SRM WP-02						
	10/01/89	601	--	500.00 C1	--	--
D	10/01/89	601	--	800.00 C1	--	--
	3/01/90	601	--	850.00 C1	--	--
D	3/01/90	601	--	1080.00 C1	--	--
D	3/01/90	601	--	1000.00 C1	--	--
D	3/01/90	601	--	924.00 C1	--	--
D	3/01/90	601	--	890.00 C1	--	--
D	3/01/90	601	--	803.00 C1	--	--
D	3/01/90	601	--	602.00 C1	--	--
	4/01/90	601	--	146.00 C1	--	--
D	4/01/90	601	--	44.00 C1	--	--
D	4/01/90	601	--	185.00 C1	--	--
D	4/01/90	601	--	240.00 C1	--	--
D	4/01/90	601	--	346.00 C1	--	--
	7/01/90	601	--	320.00 C1	--	--
D	7/01/90	601	--	320.00 C1	--	--
	10/01/90	601	--	780.00 C1	--	--
D	10/01/90	601	--	780.00 C1	--	--
	2/06/91	601	--	817.00 C1	--	4.00 C1
D	2/06/91	601	--	345.00 C1	--	1.40 C1
	8/01/91	601	--	450.00 C1	--	3.00 C1
	11/01/91	601	--	620.00 C1	--	5.10 C1
	2/01/92	601	--	350.00 C1	--	2.20 C1
	5/01/92	601	--	600.00 C1	--	2.40 C1

Table 1. Results of Chemical Analyses for VOCs in Groundwater, SRM Wells
VW&R PSA SI/RA Report

Location	Sample Date	Test Method	cis-1,2-Dichloro ethene	Tetrachloro ethylene	1,1,1-Trichloro ethane	Trichloro ethene
SRM WP-02	8/01/92	601	--	410.00 C1	--	3.10 C1
	2/01/93	601	--	99.00 C1	--	< 0.50
	5/27/93	601	--	730.00 C1	--	2.20 C1
	8/25/93	601	--	260.00 C1	--	1.20 C1
	11/23/93	601	--	450.00 C1	--	2.80 C1
SRM WP-03	10/01/89	601	--	2400.00 C1	--	--
	2/01/90	601	--	1111.00 C1	--	--
	3/01/90	601	--	1700.00 C1	--	--
	4/01/90	601	--	1260.00 C1	--	--
	4/01/90	601	--	1040.00 C1	--	--
	4/01/90	601	--	1210.00 C1	--	--
	5/01/90	601	--	1050.00 C1	--	--
	7/01/90	601	--	400.00 C1	--	--
	7/01/90	601	--	820.00 C1	--	--
	7/01/90	601	--	820.00 C1	--	--
	10/01/90	601	--	1220.00 C1	--	--
	10/01/90	601	--	1220.00 C1	--	--
	2/06/91	601	--	1110.00 C1	--	7.00 C1
	2/06/91	601	--	963.00 C1	--	4.20 C1
	5/16/91	601	--	1090.00 C1	--	6.40 C1
	8/01/91	601	--	730.00 C1	--	1.10 C1
	11/01/91	601	--	409.00 C1	--	2.90 C1
	2/01/92	601	--	520.00 C1	--	3.80 C1
	5/01/92	601	--	860.00 C1	--	3.80 C1
	8/01/92	601	--	490.00 C1	--	4.00 C1
	2/01/93	601	--	570.00 C1	--	3.70 C1
	2/25/93	8010	1.40	490.00	< 0.20	2.40
	5/27/93	601	--	460.00 C1	--	3.50 C1
	8/26/93	601	--	630.00 C1	--	3.00 C1
	11/23/93	601	--	510.00 C1	--	3.00 C1
SRM WP-121I	5/01/92	601	--	420.00 C1	--	1.70 C1
SRM WP-123E	2/06/91	601	--	14.80 C1	--	< 0.50
	5/16/91	601	--	3.40 C1	--	--
	8/01/91	601	--	4.70 C1	--	< 0.50
	11/01/91	601	--	3.30 C1	--	< 0.50
	2/01/92	601	--	2.50 C1	--	< 0.50
	5/01/92	601	--	3.70 C1	--	< 0.50
	8/01/92	601	--	3.40 C1	--	< 0.50
	2/01/93	601	--	0.90 C1	--	< 0.50
	5/28/93	601	--	2.30 C1	--	< 0.50
	8/25/93	601	--	3.20 C1	--	< 0.50 C1
	11/23/93	601	--	2.80 C1	--	< 0.50 C1

Table 1. Results of Chemical Analyses for VOCs in Groundwater, SRM Wells
VW&R PSA SI/RA Report

Location	Sample Date	Test Method	cis-1,2-Dichloro ethene	Tetrachloro ethylene	1,1,1-Trichloro ethane	Trichloro ethene
SRM WP-1231	2/06/91	601	--	765.00 C1	--	3.20 C1
	5/16/91	601	--	430.00 C1	--	2.50 C1
	8/01/91	601	--	640.00 C1	--	3.30 C1
	11/01/91	601	--	474.00 C1	--	2.60 C1
	2/01/92	601	--	410.00 C1	--	2.70 C1
	8/01/92	601	--	390.00 C1	--	2.90 C1
	2/01/93	601	--	310.00 C1	--	< 0.50
	5/28/93	601	--	440.00 C1	--	2.30 C1
	8/25/93	601	--	460.00 C1	--	2.20 C1
	11/23/93	601	--	420.00 C1	--	2.50 C1

**Table 2. Results of Chemical Analyses for VOCs in Groundwater
VW&R PSA SI/RA Report**

Location	Sample Date	Test Method	Benzene	Bromo benzene	Bromochloro methane	Bromo dichloro methane	Bromoform	Bromomethane	n-Butyl benzene	sec-Butyl benzene
Mesquite	8/20/92	8010	--	--	--	< 1.00	< 1.00	< 1.00	--	--
Kimball	9/29/94	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
Maple Grove	9/28/94	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
D	9/28/94	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
Sunflower	8/21/92	8010	--	--	--	< 1.00	< 1.00	< 1.00	--	--
Fairview	8/19/92	8010	--	--	--	< 1.00	< 1.00	< 1.00	--	--
Hampton	5/18/93	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
Halsted	9/28/94	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
Fairview	8/19/92	8010	--	--	--	1.30	3.40	< 1.00	--	--
W. King Way	4/17/94	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
D	4/17/94	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
Kimball	9/28/94	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
Maple Grove	9/29/94	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
Hampton	8/19/92	8010	--	--	--	< 1.00	< 1.00	< 1.00	--	--
Mitchell	9/29/94	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--

Notes:
 All concentrations reported in micrograms per liter (µg/L).
 < indicates value was not detected at or above stated detection limit.
 Dashes (--) indicate that no analysis performed for this entry.
 D indicates a duplicate sample.
 Qualifiers:
 C1: Indicates sampling performed by organization other than HLA.
 JS: Indicates compound result is qualified as estimated due to noncompliance with sample holding time criteria.
 U1: Indicates compound result is qualified as non-detect due to its occurrence in laboratory blank.

Table 2. Results of Chemical Analyses for VOCs in Groundwater
VW&R PSA SI/RA Report

Location	Sample Date	Test Method	Benzene	Bromo benzene	Bromochloro methane	Bromo dichloro methane	Bromoform	Bromomethane	n-Butyl benzene	sec-Butyl benzene
Five Mile										
D	4/01/94	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	4/01/94	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
Maple Grove										
	11/10/94	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
Five Mile										
D	12/13/93	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	12/13/93	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	2/24/94	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	5/19/94	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	8/11/94	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	11/09/94	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
Mitchell-House										
	8/20/92	8010	--	--	--	< 1.00	< 1.00	< 1.00	--	--
	2/24/93	8010	--	--	--	< 4.00	< 4.00	< 20.00	--	--
Mitchell-Trailr										
	8/20/92	8010	--	--	--	< 1.00	< 1.00	< 1.00	--	--
	2/24/93	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	5/17/93	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	8/17/93	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	11/16/93	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	2/24/94	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	5/19/94	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	8/11/94	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	11/08/94	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
Hampton-House										
	8/20/92	8010	--	--	--	< 1.00	< 1.00	< 1.00	--	--
	2/24/93	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	5/17/93	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
Hampton-IcePlnt										
	8/20/92	8010	--	--	--	< 1.00	< 1.00	< 1.00	--	--
	2/24/93	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	5/17/93	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	8/17/93	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	11/16/93	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	2/24/94	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	5/19/94	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	8/11/94	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	11/08/94	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
Five Mile										
	8/19/92	8010	--	--	--	< 1.00	< 1.00	< 1.00	--	--
	2/22/93	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
D	2/22/93	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--

Table 2. Results of Chemical Analyses for VOCs in Groundwater
VW&R PSA SI/RA Report

Location	Sample Date	Test Method	Benzene	Bromo benzene	Bromochloro methane	Bromo dichloro methane	Bromoform	Bromomethane	n-Butyl benzene	sec-Butyl benzene
Five Mile										
	5/17/93	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
D	5/17/93	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	8/17/93	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
D	8/17/93	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	11/16/93	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
D	11/16/93	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	2/24/94	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
D	2/24/94	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	5/19/94	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
D	5/19/94	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	8/11/94	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
D	8/11/94	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	11/08/94	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
Hampton										
	8/19/92	8010	--	--	--	< 1.00	< 1.00	< 1.00	--	--
	2/25/93	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	5/19/93	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
D	5/19/93	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	8/17/93	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	11/16/93	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	2/24/94	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	5/19/94	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	8/15/94	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	11/09/94	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
Five Mile										
	8/19/92	8010	--	--	--	< 1.00	< 1.00	< 1.00	--	--
	8/17/93	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	11/16/93	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	2/24/94	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	5/19/94	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	8/11/94	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	11/08/94	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
Ancestor										
	8/19/92	8010	--	--	--	< 1.00	< 1.00	< 1.00	--	--
D	8/19/92	8010	--	--	--	< 1.00	< 1.00	< 1.00	--	--
	2/22/93	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	5/17/93	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	8/17/93	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	11/16/93	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
Five Mile										
	8/19/92	8010	--	--	--	< 1.00	< 1.00	< 1.00	--	--
	8/17/93	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	5/19/94	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--

Table 2. Results of Chemical Analyses for VOCs in Groundwater
VW&R PSA SI/RA Report

Location	Sample Date	Test Method	Benzene	Bromo benzene	Bromochloro methane	Bromo dichloro methane	Bromoform	Bromomethane	n-Butyl benzene	sec-Butyl benzene
Wildwood	5/19/94	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	8/11/94	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
Ash Park Ln(ott)	2/18/93	502.2	< 5.00	< 5.00	< 5.00	< 100.00	< 100.00	< 5.00	< 5.00	< 5.00
Benjamin	8/21/92	8010	--	--	--	< 1.00	< 1.00	< 1.00	--	--
Brookhaven	8/19/92	8010	--	--	--	< 1.00	< 1.00	< 1.00	--	--
Brookhaven	8/19/92	8010	--	--	--	< 1.00	< 1.00	< 1.00	--	--
Mitchell	8/19/92	8010	--	--	--	< 1.00	< 1.00	< 1.00	--	--
Maple Grove	2/22/93	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	5/17/93	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	8/17/93	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	11/16/93	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	5/19/94	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	8/11/94	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
D	8/11/94	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	11/09/94	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
Maple Grove	2/24/93	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
Fairview	8/20/92	8010	--	--	--	< 1.00	< 1.00	< 1.00	--	--
Fairview	8/19/92	8010	--	--	--	< 1.00	< 1.00	< 1.00	--	--
D	8/19/92	8010	--	--	--	< 1.00	< 1.00	< 1.00	--	--
Susan	8/21/92	8010	--	--	--	< 1.00	< 1.00	< 1.00	--	--
D	8/21/92	8010	--	--	--	< 1.00	< 1.00	< 1.00	--	--
	1/26/93	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
D	1/26/93	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	2/24/93	8010	--	--	--	< 4.00	< 4.00	< 20.00	--	--
D	2/24/93	8010	--	--	--	< 4.00	< 4.00	< 20.00	--	--
	5/17/93	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
D	5/17/93	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	8/17/93	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
D	8/17/93	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--

Table 2. Results of Chemical Analyses for VOCs in Groundwater
VW&R PSA SI/RA Report

Location	Sample Date	Test Method	Benzene	Bromo benzene	Bromochloro methane	Bromo dichloro methane	Bromoform	Bromomethane	n-Butyl benzene	sec-Butyl benzene
Susan										
	11/16/93	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
D	11/16/93	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	2/24/94	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
D	2/24/94	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	5/19/94	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
D	5/19/94	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	8/11/94	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
D	8/11/94	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	11/09/94	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
D	11/09/94	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
Mitchell										
	5/17/93	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	8/17/93	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	11/16/93	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	2/24/94	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	5/19/94	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	8/11/94	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	11/09/94	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
Kimball										
	8/21/92	8010	--	--	--	< 1.00	< 1.00	< 1.00	--	--
Mitchell										
	6/25/93	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
D	6/25/93	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	11/17/93	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	2/24/94	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	5/19/94	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	8/11/94	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	11/09/94	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
Hampton										
	8/20/92	8010	--	--	--	< 1.00	< 1.00	< 1.00	--	--
D	8/20/92	8010	--	--	--	< 1.00	< 1.00	< 1.00	--	--
Fairview										
	8/20/92	8010	--	--	--	< 1.00	< 1.00	< 1.00	--	--
Sunflower										
	1/11/94	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
D	1/11/94	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
Halstead										
	8/20/92	8010	--	--	--	< 1.00	< 1.00	< 1.00	--	--
	2/24/93	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	5/19/93	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	8/17/93	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	11/16/93	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--

Table 2. Results of Chemical Analyses for VOCs in Groundwater
VW&R PSA SI/RA Report

Location	Sample Date	Test Method	Benzene	Bromo benzene	Bromochloro methane	Bromo dichloro methane	Bromoform	Bromomethane	n-Butyl benzene	sec-Butyl benzene
Halstead										
	2/24/94	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	5/19/94	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	8/11/94	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	11/08/94	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
Halstead										
	8/20/92	8010	--	--	--	< 1.00	< 1.00	< 1.00	--	--
Sunflower										
	8/21/92	8010	--	--	--	< 1.00	< 1.00	< 1.00	--	--
Irving										
	9/28/94	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
Sunflower										
	8/20/92	8010	--	--	--	< 1.00	< 1.00	< 1.00	--	--
Chen - MW-01										
	2/23/93	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
Chen - MW-09										
	2/23/93	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
EQUIP BLANK										
	8/21/92	8010	--	--	--	< 1.00	< 1.00	< 1.00	--	--
	2/25/93	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
FMEW-1										
	8/15/94	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
D	8/15/94	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
SRM MW-10										
	2/25/93	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
SRM MW-11										
	2/25/93	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
SRM MW-19										
	2/25/93	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
SRM MW-21										
	2/25/93	8010	--	--	--	< 10.00	< 10.00	< 50.00	--	--
D	2/25/93	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
SRM WP-03										
	2/25/93	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--

Table 2. Results of Chemical Analyses for VOCs in Groundwater
VW&R PSA SI/RA Report

Location	Sample Date	Test Method	Benzene	Bromo benzene	Bromochloro methane	Bromo dichloro methane	Bromoform	Bromomethane	n-Butyl benzene	sec-Butyl benzene
Sunrise Well	5/19/94	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	8/11/94	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	11/09/94	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
TRIP BLANK	8/19/92	8010	--	--	--	< 1.00	< 1.00	< 1.00	--	--
	8/20/92	8010	--	--	--	< 1.00	< 1.00	< 1.00	--	--
	8/21/92	8010	--	--	--	< 1.00	< 1.00	< 1.00	--	--
	1/26/93	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	2/22/93	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	2/24/93	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	2/25/93	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	2/26/93	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	5/17/93	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	5/19/93	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	8/17/93	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	11/16/93	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	12/13/93	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	1/11/94	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	2/24/94	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	4/17/94	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	5/19/94	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	8/11/94	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	8/15/94	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	9/29/94	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--
	11/09/94	8010	--	--	--	< 0.20	< 0.20	< 1.00	--	--

Table 2. Results of Chemical Analyses for VOCs in Groundwater
VW&R PSA SI/RA Report

Location	Sample Date	Test Method	tert-Butyl benzene	Carbon tetra chloride	Chloro benzene	Chloroethane	2-Chloro ethyl vinyl ether	Chloroform	Chloro methane	2-Chloro toluene
Mesquite	8/20/92	8010	--	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	--
Kimball	9/29/94	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
Maple Grove	9/28/94	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
D	9/28/94	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
Sunflower	8/21/92	8010	--	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	--
Fairview	8/19/92	8010	--	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	--
Hampton	5/18/93	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
Halstad	9/28/94	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
Fairview	8/19/92	8010	--	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	--
W. King Way	4/17/94	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
D	4/17/94	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
Kimball	9/28/94	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
Maple Grove	9/29/94	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
Hampton	8/19/92	8010	--	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	--
Mitchell	9/29/94	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
Five Mile	4/01/94	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
D	4/01/94	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
Maple Grove	11/10/94	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--

Table 2. Results of Chemical Analyses for VOCs in Groundwater
VW&R PSA SI/RA Report

Location	Sample Date	Test Method	tert-Butyl benzene	Carbon tetra chloride	Chloro benzene	Chloroethane	2-Chloro ethyl vinyl ether	Chloroform	Chloro methane	2-Chloro toluene
Five Mile										
	12/13/93	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
D	12/13/93	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	2/24/94	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	5/19/94	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	8/11/94	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	11/09/94	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
Mitchell-House										
	8/20/92	8010	--	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	--
	2/24/93	8010	--	< 4.00	< 10.00	< 20.00	--	< 4.00	< 40.00	--
Mitchell-Trailr										
	8/20/92	8010	--	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	--
	2/24/93	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	5/17/93	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	8/17/93	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	11/16/93	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	2/24/94	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	5/19/94	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	8/11/94	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	11/08/94	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
Hampton-House										
	8/20/92	8010	--	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	--
	2/24/93	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	5/17/93	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
Hampton-IcePlnt										
	8/20/92	8010	--	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	--
	2/24/93	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	5/17/93	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	8/17/93	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	11/16/93	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	2/24/94	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	5/19/94	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	8/11/94	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	11/08/94	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
Five Mile										
	8/19/92	8010	--	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	--
	2/22/93	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
D	2/22/93	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	5/17/93	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
D	5/17/93	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	8/17/93	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
D	8/17/93	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	11/16/93	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
D	11/16/93	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	2/24/94	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--

Table 2. Results of Chemical Analyses for VOCs in Groundwater
VW&R PSA SI/RA Report

Location	Sample Date	Test Method	tert-Butyl benzene	Carbon tetra chloride	Chloro benzene	Chloroethane	2-Chloro ethyl vinyl ether	Chloroform	Chloro methane	2-Chloro toluene
Five Mile										
D	2/24/94	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	5/19/94	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
D	5/19/94	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	8/11/94	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
D	8/11/94	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	11/08/94	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
Hampton										
	8/19/92	8010	--	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	--
	2/25/93	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	5/19/93	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
D	5/19/93	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	8/17/93	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	11/16/93	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	2/24/94	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	5/19/94	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	8/15/94	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	11/09/94	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
Five Mile										
	8/19/92	8010	--	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	--
	8/17/93	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	11/16/93	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	2/24/94	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	5/19/94	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	8/11/94	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	11/08/94	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
Ancestor										
	8/19/92	8010	--	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	--
D	8/19/92	8010	--	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	--
	2/22/93	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	5/17/93	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	8/17/93	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	11/16/93	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
Five Mile										
	8/19/92	8010	--	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	--
	8/17/93	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	5/19/94	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
Wildwood										
	5/19/94	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	8/11/94	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
Ash Park Ln(ott)										
	2/18/93	502.2	< 100.00	< 5.00	< 5.00	< 5.00	--	< 100.00	< 5.00	< 5.00

Table 2. Results of Chemical Analyses for VOCs in Groundwater
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Location	Sample Date	Test Method	tert-Butyl benzene	Carbon tetra chloride	Chloro benzene	Chloroethane	2-Chloro ethyl vinyl ether	Chloroform	Chloro methane	2-Chloro toluene
Benjamin	8/21/92	8010	--	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	16.00	--
Brookhaven	8/19/92	8010	--	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	--
Brookhaven	8/19/92	8010	--	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	--
Mitchell	8/19/92	8010	--	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	--
Maple Grove	2/22/93	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	5/17/93	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	8/17/93	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	11/16/93	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	5/19/94	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	8/11/94	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
D	8/11/94	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	11/09/94	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
Maple Grove	2/24/93	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
Fairview	8/20/92	8010	--	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	--
Fairview	8/19/92	8010	--	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	--
D	8/19/92	8010	--	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	--
Susan	8/21/92	8010	--	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	--
D	8/21/92	8010	--	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	--
	1/26/93	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
D	1/26/93	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	2/24/93	8010	--	< 4.00	< 10.00	< 20.00	--	< 4.00	< 40.00	--
D	2/24/93	8010	--	< 4.00	< 10.00	< 20.00	--	< 4.00	< 40.00	--
	5/17/93	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
D	5/17/93	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	8/17/93	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
D	8/17/93	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	11/16/93	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
D	11/16/93	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	2/24/94	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
D	2/24/94	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	5/19/94	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
D	5/19/94	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	8/11/94	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--

**Table 2. Results of Chemical Analyses for VOCs in Groundwater
VW&R PSA SI/RA Report**

Location	Sample Date	Test Method	tert-Butyl benzene	Carbon tetra chloride	Chloro benzene	Chloroethane	2-Chloro ethyl vinyl ether	Chloroform	Chloro methane	2-Chloro toluene
Susan										
D	8/11/94	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	11/09/94	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
D	11/09/94	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
Mitchell										
	5/17/93	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	8/17/93	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	11/16/93	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	2/24/94	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	5/19/94	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	8/11/94	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	11/09/94	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
Kimball										
	8/21/92	8010	--	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	--
Mitchell										
	6/25/93	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
D	6/25/93	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	11/17/93	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	2/24/94	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	5/19/94	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	8/11/94	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	11/09/94	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
Hampton										
	8/20/92	8010	--	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	--
D	8/20/92	8010	--	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	--
Fairview										
	8/20/92	8010	--	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	--
Sunflower										
	1/11/94	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
D	1/11/94	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
Halstead										
	8/20/92	8010	--	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	--
	2/24/93	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	5/19/93	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	8/17/93	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	11/16/93	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	2/24/94	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	5/19/94	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	8/11/94	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	11/08/94	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--

Table 2: Results of Chemical Analyses for VOCs in Groundwater
VW&R PSA SI/RA Report

Location	Sample Date	Test Method	tert-Butyl benzene	Carbon tetra chloride	Chloro benzene	Chloroethane	2-Chloro ethyl vinyl ether	Chloroform	Chloro methane	2-Chloro toluene
Halstead	8/20/92	8010	--	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	--
Sunflower	8/21/92	8010	--	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	--
Irving	9/28/94	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
Sunflower	8/20/92	8010	--	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	--
Chen - MW-01	2/23/93	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
Chen - MW-09	2/23/93	8010	--	< 0.20	< 0.50	< 1.00	--	0.40	< 2.00	--
EQUIP BLANK	8/21/92	8010	--	< 1.00	< 1.00	< 1.00	< 1.00	2.80	< 1.00	--
	2/25/93	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
FMEW-1	8/15/94	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
D	8/15/94	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
SRM MW-10	2/25/93	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
SRM MW-11	2/25/93	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
SRM MW-19	2/25/93	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
SRM MW-21	2/25/93	8010	--	< 10.00	< 25.00	< 50.00	--	< 10.00	< 100.00	--
D	2/25/93	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
SRM WP-03	2/25/93	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
Sunrise Well	5/19/94	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	8/11/94	8010	--	< 0.20	< 0.50	< 1.00	--	0.20	< 2.00	--
	11/09/94	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
TRIP BLANK	8/19/92	8010	--	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	--
	8/20/92	8010	--	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	--

Table 2. Results of Chemical Analyses for VOCs in Groundwater
VW&R PSA SI/RA Report

Location	Sample Date	Test Method	tert-Butyl benzene	Carbon tetra chloride	Chloro benzene	Chloroethane	2-Chloro ethyl vinyl ether	Chloroform	Chloro methane	2-Chloro toluene
TRIP BLANK	8/21/92	8010	--	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	--
	1/26/93	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	2/22/93	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	2/24/93	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	2/25/93	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	2/26/93	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	5/17/93	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	5/19/93	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	8/17/93	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	11/16/93	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	12/13/93	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	1/11/94	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	2/24/94	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	4/17/94	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	5/19/94	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	8/11/94	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	8/15/94	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	9/29/94	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--
	11/09/94	8010	--	< 0.20	< 0.50	< 1.00	--	< 0.20	< 2.00	--

**Table 2. Results of Chemical Analyses for VOCs in Groundwater
VW&R PSA SI/RA Report**

Location	Sample Date	Test Method	4-Chloro toluene	Dibromo chloro methane	Dibromo chloro propane	1,2-Dibromo ethane	1,2-Dichloro benzene	1,3-Dichloro benzene	1,4-Dichloro benzene	Dichloro difluoro methane
Mesquite	8/20/92	8010	--	--	--	--	< 1.00	< 1.00	< 1.00	< 1.00
Kimball	9/29/94	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
Maple Grove	9/28/94	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
D	9/28/94	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
Sunflower	8/21/92	8010	--	--	--	--	< 1.00	< 1.00	< 1.00	< 1.00
Fairview	8/19/92	8010	--	--	--	--	< 1.00	< 1.00	< 1.00	< 1.00
Hampton	5/18/93	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
Halstad	9/28/94	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
Fairview	8/19/92	8010	--	--	--	--	< 1.00	< 1.00	< 1.00	< 1.00
I W. King Way	4/17/94	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
D	4/17/94	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
Kimball	9/28/94	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
Maple Grove	9/29/94	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
Hampton	8/19/92	8010	--	--	--	--	< 1.00	< 1.00	< 1.00	< 1.00
Mitchell	9/29/94	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
Five Mile	4/01/94	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
D	4/01/94	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
Maple Grove	11/10/94	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--

Location	Sample Date	Test Method	4-Chloro toluene	Dibromo chloro methane	Dibromo chloro propane	1,2-Dibromo ethane	1,2-Dichloro benzene	1,3-Dichloro benzene	1,4-Dichloro benzene	Dichloro difluoro methane
Five Mile										
	12/13/93	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
D	12/13/93	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	2/24/94	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	5/19/94	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	8/11/94	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	11/09/94	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
Mitchell-House										
	8/20/92	8010	--	--	--	--	< 1.00	< 1.00	< 1.00	< 1.00
	2/24/93	8010	--	< 4.00	--	< 10.00	< 10.00	< 10.00	< 10.00	--
Mitchell-Trailr										
	8/20/92	8010	--	--	--	--	< 1.00	< 1.00	< 1.00	< 1.00
	2/24/93	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	5/17/93	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	8/17/93	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	11/16/93	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	2/24/94	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	5/19/94	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	8/11/94	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	11/08/94	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
Hampton-House										
	8/20/92	8010	--	--	--	--	< 1.00	< 1.00	< 1.00	< 1.00
	2/24/93	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	5/17/93	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
Hampton-IcePlnt										
	8/20/92	8010	--	--	--	--	< 1.00	< 1.00	< 1.00	< 1.00
	2/24/93	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	5/17/93	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	8/17/93	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	11/16/93	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	2/24/94	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	5/19/94	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	8/11/94	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	11/08/94	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
Five Mile										
	8/19/92	8010	--	--	--	--	< 1.00	< 1.00	< 1.00	< 1.00
	2/22/93	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
D	2/22/93	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	5/17/93	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
D	5/17/93	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	8/17/93	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
D	8/17/93	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	11/16/93	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
D	11/16/93	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	2/24/94	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--

**Table 2. Results of Chemical Analyses for VOCs in Groundwater
VW&R PSA SI/RA Report**

Location	Sample Date	Test Method	4-Chloro toluene	Dibromo chloro methane	Dibromo chloro propane	1,2-Dibromo ethane	1,2-Dichloro benzene	1,3-Dichloro benzene	1,4-Dichloro benzene	Dichloro difluoro methane
Five Mile										
D	2/24/94	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	5/19/94	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
D	5/19/94	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	8/11/94	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
D	8/11/94	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	11/08/94	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
Hampton										
	8/19/92	8010	--	--	--	--	< 1.00	< 1.00	< 1.00	< 1.00
	2/25/93	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	5/19/93	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
D	5/19/93	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	8/17/93	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	11/16/93	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	2/24/94	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	5/19/94	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	8/15/94	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	11/09/94	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
Five Mile										
	8/19/92	8010	--	--	--	--	< 1.00	< 1.00	< 1.00	< 1.00
	8/17/93	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	11/16/93	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	2/24/94	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	5/19/94	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	8/11/94	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	11/08/94	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
Ancestor										
	8/19/92	8010	--	--	--	--	< 1.00	< 1.00	< 1.00	< 1.00
D	8/19/92	8010	--	--	--	--	< 1.00	< 1.00	< 1.00	< 1.00
	2/22/93	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	5/17/93	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	8/17/93	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	11/16/93	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
Five Mile										
	8/19/92	8010	--	--	--	--	< 1.00	< 1.00	< 1.00	< 1.00
	8/17/93	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	5/19/94	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
Wildwood										
	5/19/94	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	8/11/94	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
Ash Park Ln(ott)										
	2/18/93	502.2	< 5.00	< 100.00	< 5.00	< 5.00	< 600.00	< 5.00	< 75.00	< 5.00

Table 2. Results of Chemical Analyses for VOCs in Groundwater
VW&R PSA SI/RA Report

Location	Sample Date	Test Method	4-Chloro toluene	Dibromo chloro methane	Dibromo chloro propane	1,2-Dibromo ethane	1,2-Dichloro benzene	1,3-Dichloro benzene	1,4-Dichloro benzene	Dichloro difluoro methane
Benjamin	8/21/92	8010	--	--	--	--	< 1.00	< 1.00	< 1.00	< 1.00
Brookhaven	8/19/92	8010	--	--	--	--	< 1.00	< 1.00	< 1.00	< 1.00
Brookhaven	8/19/92	8010	--	--	--	--	< 1.00	< 1.00	< 1.00	< 1.00
Mitchell	8/19/92	8010	--	--	--	--	< 1.00	< 1.00	< 1.00	< 1.00
Maple Grove	2/22/93	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	5/17/93	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	8/17/93	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	11/16/93	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	5/19/94	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	8/11/94	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
D	8/11/94	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	11/09/94	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
Maple Grove	2/24/93	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
Fairview	8/20/92	8010	--	--	--	--	< 1.00	< 1.00	< 1.00	< 1.00
Fairview	8/19/92	8010	--	--	--	--	< 1.00	< 1.00	< 1.00	< 1.00
D	8/19/92	8010	--	--	--	--	< 1.00	< 1.00	< 1.00	< 1.00
Susan	8/21/92	8010	--	--	--	--	< 1.00	< 1.00	< 1.00	< 1.00
D	8/21/92	8010	--	--	--	--	< 1.00	< 1.00	< 1.00	< 1.00
	1/26/93	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
D	1/26/93	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	2/24/93	8010	--	< 4.00	--	< 10.00	< 10.00	< 10.00	< 10.00	--
D	2/24/93	8010	--	< 4.00	--	< 10.00	< 10.00	< 10.00	< 10.00	--
	5/17/93	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
D	5/17/93	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	8/17/93	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
D	8/17/93	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	11/16/93	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
D	11/16/93	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	2/24/94	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
D	2/24/94	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	5/19/94	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
D	5/19/94	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	8/11/94	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--

Table 2. Results of Chemical Analyses for VOCs in Groundwater
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Location	Sample Date	Test Method	4-Chloro toluene	Dibromo chloro methane	Dibromo chloro propane	1,2-Dibromo ethane	1,2-Dichloro benzene	1,3-Dichloro benzene	1,4-Dichloro benzene	Dichloro difluoro methane
Susan										
D	8/11/94	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	11/09/94	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
D	11/09/94	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
Mitchell										
	5/17/93	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	8/17/93	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	11/16/93	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	2/24/94	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	5/19/94	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	8/11/94	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	11/09/94	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
Kimball										
	8/21/92	8010	--	--	--	--	< 1.00	< 1.00	< 1.00	< 1.00
Mitchell										
	6/25/93	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
D	6/25/93	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	11/17/93	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	2/24/94	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	5/19/94	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	8/11/94	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	11/09/94	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
Hampton										
	8/20/92	8010	--	--	--	--	< 1.00	< 1.00	< 1.00	< 1.00
D	8/20/92	8010	--	--	--	--	< 1.00	< 1.00	< 1.00	< 1.00
Fairview										
	8/20/92	8010	--	--	--	--	< 1.00	< 1.00	< 1.00	< 1.00
Sunflower										
	1/11/94	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
D	1/11/94	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
Halstead										
	8/20/92	8010	--	--	--	--	< 1.00	< 1.00	< 1.00	< 1.00
	2/24/93	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	5/19/93	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	8/17/93	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	11/16/93	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	2/24/94	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	5/19/94	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	8/11/94	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	11/08/94	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--

**Table 2. Results of Chemical Analyses for VOCs In Groundwater
VW&R PSA SI/RA Report**

Location	Sample Date	Test Method	4-Chloro toluene	Dibromo chloro methane	Dibromo chloro propane	1,2-Dibromo ethane	1,2-Dichloro benzene	1,3-Dichloro benzene	1,4-Dichloro benzene	Dichloro difluoro methane
Halstead	8/20/92	8010	--	--	--	--	< 1.00	< 1.00	< 1.00	< 1.00
Sunflower	8/21/92	8010	--	--	--	--	< 1.00	< 1.00	< 1.00	< 1.00
Irving	9/28/94	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
Sunflower	8/20/92	8010	--	--	--	--	< 1.00	< 1.00	< 1.00	< 1.00
Chen - MW-01	2/23/93	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
Chen - MW-09	2/23/93	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
EQUIP BLANK	8/21/92	8010	--	--	--	--	< 1.00	< 1.00	< 1.00	< 1.00
	2/25/93	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
FMEW-1	8/15/94	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
D	8/15/94	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
SRM MW-10	2/25/93	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
SRM MW-11	2/25/93	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
SRM MW-19	2/25/93	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
SRM MW-21	2/25/93	8010	--	< 10.00	--	< 25.00	< 25.00	< 25.00	< 25.00	--
D	2/25/93	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
SRM WP-03	2/25/93	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
Sunrise Well	5/19/94	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	8/11/94	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	11/09/94	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
TRIP BLANK	8/19/92	8010	--	--	--	--	< 1.00	< 1.00	< 1.00	< 1.00
	8/20/92	8010	--	--	--	--	< 1.00	< 1.00	< 1.00	< 1.00

**Table 2. Results of Chemical Analyses for VOCs in Groundwater
VW&R PSA SI/RA Report**

Location	Sample Date	Test Method	Methylene chloride	n-Propyl benzene	Styrene	1,1,1,2-Tetrachloro ethane	1,1,2,2-Tetrachloro ethane	Tetrachloro ethylene	Toluene	1,2,3-Trichloro benzene
SRM MW-11	2/25/93	8010	< 2.00	--	--	--	< 0.20	0.80	--	--
	5/25/93	601	--	--	--	--	--	0.90 C1	--	--
	8/25/93	601	--	--	--	--	--	3.50 C1	--	--
SRM MW-16	5/01/92	601	--	--	--	--	--	100.00 C1	--	--
	8/01/92	601	--	--	--	--	--	100.00 C1	--	--
	5/25/93	601	--	--	--	--	--	270.00 C1	--	--
	8/25/93	601	--	--	--	--	--	700.00 C1	--	--
	11/23/93	601	--	--	--	--	--	550.00 C1	--	--
	2/01/94	601	--	--	--	--	--	390.00 C1	--	--
SRM MW-18 D	5/01/92	601	--	--	--	--	--	17.00 C1	--	--
	8/01/92	601	--	--	--	--	--	15.40 C1	--	--
	8/01/92	601	--	--	--	--	--	12.00 C1	--	--
	2/01/93	601	--	--	--	--	--	4.90 C1	--	--
	5/25/93	601	--	--	--	--	--	3.40 C1	--	--
	8/25/93	601	--	--	--	--	--	5.70 C1	--	--
	11/23/93	601	--	--	--	--	--	4.10 C1	--	--
	2/01/94	601	--	--	--	--	--	3.40 C1	--	--
SRM MW-19	8/01/92	601	--	--	--	--	--	< 0.50	--	--
	2/01/93	601	--	--	--	--	--	< 0.50	--	--
	2/25/93	8010	< 2.00	--	--	--	< 0.20	< 0.20	--	--
	8/25/93	601	--	--	--	--	--	< 0.50 C1	--	--
	11/23/93	601	--	--	--	--	--	< 0.50 C1	--	--
SRM MW-20	8/01/92	601	--	--	--	--	--	9.40 C1	--	--
	8/25/93	601	--	--	--	--	--	0.50 C1	--	--
SRM MW-21 D D D D D D	5/01/92	601	--	--	--	--	--	310.00 C1	--	--
	5/01/92	601	--	--	--	--	--	380.00 C1	--	--
	8/01/92	601	--	--	--	--	--	70.00 C1	--	--
	2/01/93	601	--	--	--	--	--	740.00 C1	--	--
	2/01/93	601	--	--	--	--	--	720.00 C1	--	--
	2/25/93	8010	< 100.00	--	--	--	< 10.00	450.00	--	--
	2/25/93	8010	< 2.00	--	--	--	< 0.20	610.00	--	--
	5/25/93	601	--	--	--	--	--	1050.00 C1	--	--
	8/25/93	601	--	--	--	--	--	470.00 C1	--	--
	11/23/93	601	--	--	--	--	--	540.00 C1	--	--
D	2/01/94	601	--	--	--	--	--	900.00 C1	--	--
	2/01/94	601	--	--	--	--	--	1060.00 C1	--	--

Table 2. Results of Chemical Analyses for VOCs in Groundwater
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Location	Sample Date	Test Method	Methylene chloride	n-Propyl benzene	Styrene	1,1,1,2-Tetrachloro ethane	1,1,2,2-Tetrachloro ethane	Tetrachloro ethylene	Toluene	1,2,3-Trichloro benzene
SRM WP-01	5/01/92	601	--	--	--	--	--	580.00 C1	--	--
	8/01/92	601	--	--	--	--	--	300.00 C1	--	--
	2/01/93	601	--	--	--	--	--	73.00 C1	--	--
	5/28/93	601	--	--	--	--	--	170.00 C1	--	--
	8/27/93	601	--	--	--	--	--	300.00 C1	--	--
	11/23/93	601	--	--	--	--	--	290.00 C1	--	--
SRM WP-02	5/01/92	601	--	--	--	--	--	600.00 C1	--	--
	8/01/92	601	--	--	--	--	--	410.00 C1	--	--
	2/01/93	601	--	--	--	--	--	99.00 C1	--	--
	5/27/93	601	--	--	--	--	--	730.00 C1	--	--
	8/25/93	601	--	--	--	--	--	260.00 C1	--	--
	11/23/93	601	--	--	--	--	--	450.00 C1	--	--
SRM WP-03	5/01/92	601	--	--	--	--	--	860.00 C1	--	--
	8/01/92	601	--	--	--	--	--	490.00 C1	--	--
	2/01/93	601	--	--	--	--	--	570.00 C1	--	--
	2/25/93	8010	< 2.00	--	--	--	< 0.20	490.00	--	--
	5/27/93	601	--	--	--	--	--	460.00 C1	--	--
	8/26/93	601	--	--	--	--	--	630.00 C1	--	--
	11/23/93	601	--	--	--	--	--	510.00 C1	--	--
SRM WP-1211	5/01/92	601	--	--	--	--	--	420.00 C1	--	--
SRM WP-123E	5/01/92	601	--	--	--	--	--	3.70 C1	--	--
	8/01/92	601	--	--	--	--	--	3.40 C1	--	--
	2/01/93	601	--	--	--	--	--	0.90 C1	--	--
	5/28/93	601	--	--	--	--	--	2.30 C1	--	--
	8/25/93	601	--	--	--	--	--	3.20 C1	--	--
	11/23/93	601	--	--	--	--	--	2.80 C1	--	--
SRM WP-123I	8/01/92	601	--	--	--	--	--	390.00 C1	--	--
	2/01/93	601	--	--	--	--	--	310.00 C1	--	--
	5/28/93	601	--	--	--	--	--	440.00 C1	--	--
	8/25/93	601	--	--	--	--	--	460.00 C1	--	--
	11/23/93	601	--	--	--	--	--	420.00 C1	--	--
Sunrise Well	5/19/94	8010	< 2.00	--	--	--	< 0.20	0.70	--	--
	8/11/94	8010	< 2.00	--	--	--	< 0.20	0.40	--	--
	11/09/94	8010	< 2.00	--	--	--	< 0.20	0.30	--	--

Table 2. Results of Chemical Analyses for VOCs in Groundwater
VW&R PSA SI/RA Report

Location	Sample Date	Test Method	Methylene chloride	n-Propyl benzene	Styrene	1,1,1,2-Tetrachloro ethane	1,1,2,2-Tetrachloro ethane	Tetrachloro ethylene	Toluene	1,2,3-Trichloro benzene
TRIP BLANK										
	5/01/92	601	--	--	--	--	--	< 0.50	--	--
	8/01/92	601	--	--	--	--	--	< 0.50	--	--
	8/19/92	8010	< 1.00	--	--	< 1.00	< 1.00	< 1.00	--	--
	8/20/92	8010	< 1.00	--	--	< 1.00	< 1.00	< 1.00	--	--
	8/21/92	8010	1.10	--	--	< 1.00	< 1.00	< 1.00	--	--
	1/26/93	8010	< 2.00	--	--	--	< 0.20	< 0.20	--	--
	2/22/93	8010	< 2.00	--	--	--	< 0.20	< 0.20	--	--
	2/24/93	8010	< 2.00	--	--	--	< 0.20	< 0.20	--	--
	2/25/93	8010	< 2.00	--	--	--	< 0.20	< 0.20	--	--
	2/26/93	8010	< 2.00	--	--	--	< 0.20	< 0.20	--	--
	5/17/93	8010	< 2.00	--	--	--	< 0.20	< 0.20	--	--
	5/19/93	8010	4.70	--	--	--	< 0.20	< 0.20	--	--
	5/24/93	601	--	--	--	--	--	< 0.50	--	--
	8/17/93	8010	< 2.00	--	--	--	< 0.20	< 0.20	--	--
	8/26/93	601	--	--	--	--	--	< 0.50 C1	--	--
	11/16/93	8010	< 2.00	--	--	--	< 0.20	< 0.20	--	--
	11/23/93	601	--	--	--	--	--	< 0.50 C1	--	--
	12/13/93	8010	< 2.00	--	--	--	< 0.20	< 0.20	--	--
	1/11/94	8010	< 2.00	--	--	--	< 0.20	< 0.20	--	--
	2/24/94	8010	< 2.00	--	--	--	< 0.20	< 0.20	--	--
	4/17/94	8010	< 2.00	--	--	--	< 0.20	< 0.20	--	--
	5/19/94	8010	< 2.00	--	--	--	< 0.20	< 0.20	--	--
	8/11/94	8010	< 2.00	--	--	--	< 0.20	< 0.20	--	--
	8/15/94	8010	< 2.00	--	--	--	< 0.20	< 0.20	--	--
	9/29/94	8010	< 2.00	--	--	--	< 0.20	< 0.20	--	--
	11/09/94	8010	< 2.00	--	--	--	< 0.20	< 0.20	--	--

Table 2. Results of Chemical Analyses for VOCs in Groundwater
VW&R PSA SI/RA Report

Location	Sample Date	Test Method	1,1,1-Trichloro ethane	1,1,2-Trichloro ethane	Trichloro ethene	Trichloro fluoro methane	1,2,3-Trichloro propane	1,2,4-Trimethyl benzene	1,3,5-Trimethyl benzene	Vinyl chloride
Mesquite	8/20/92	8010	< 1.00	< 1.00	< 1.00	< 1.00	--	--	--	< 1.00
Kimball	9/29/94	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
Maple Grove	9/28/94	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
D	9/28/94	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
Sunflower	8/21/92	8010	< 1.00	< 1.00	< 1.00	< 1.00	--	--	--	< 1.00
Fairview	8/19/92	8010	< 1.00	< 1.00	< 1.00	< 1.00	--	--	--	< 1.00
Hampton	5/18/93	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
Halstad	9/28/94	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
Fairview	8/19/92	8010	< 1.00	< 1.00	< 1.00	< 1.00	--	--	--	< 1.00
W. King Way	4/17/94	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
D	4/17/94	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
Kimball	9/28/94	8010	< 0.20	< 0.20	0.20	< 0.50	--	--	--	< 1.00
Maple Grove	9/29/94	8010	< 0.20	< 0.20	1.40	< 0.50	--	--	--	< 1.00
Hampton	8/19/92	8010	< 1.00	< 1.00	< 1.00	< 1.00	--	--	--	< 1.00
Mitchell	9/29/94	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
Five Mile	4/01/94	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
D	4/01/94	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
Maple Grove	11/10/94	8010	< 0.20	< 0.20	0.50	< 0.50	--	--	--	< 1.00

Location	Sample Date	Test Method	1,1,1-Trichloro ethane	1,1,2-Trichloro ethane	Trichloro ethene	Trichloro fluoro methane	1,2,3-Trichloro propane	1,2,4-Trimethyl benzene	1,3,5-Trimethyl benzene	Vinyl chloride
Five Mile										
	12/13/93	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
D	12/13/93	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
	2/24/94	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
	5/19/94	8010	< 0.20	< 0.20	0.30	< 0.50	--	--	--	< 1.00
	8/11/94	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
	11/09/94	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
Mitchell-House										
	8/20/92	8010	< 1.00	< 1.00	< 1.00	< 1.00	--	--	--	< 1.00
	2/24/93	8010	< 4.00	< 4.00	< 4.00	< 10.00	--	--	--	< 20.00
Mitchell-Trailr										
	8/20/92	8010	< 1.00	< 1.00	< 1.00	< 1.00	--	--	--	< 1.00
	2/24/93	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
	5/17/93	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
	8/17/93	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
	11/16/93	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
	2/24/94	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
	5/19/94	8010	< 0.20	< 0.20	0.20	< 0.50	--	--	--	< 1.00
	8/11/94	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
	11/08/94	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
Hampton-House										
	8/20/92	8010	< 1.00	< 1.00	< 1.00	< 1.00	--	--	--	< 1.00
	2/24/93	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
	5/17/93	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
Hampton-IcePlnt										
	8/20/92	8010	< 1.00	< 1.00	< 1.00	< 1.00	--	--	--	< 1.00
	2/24/93	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
	5/17/93	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
	8/17/93	8010	< 0.20	< 0.20	< 0.20	0.70	--	--	--	< 1.00
	11/16/93	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
	2/24/94	8010	< 0.20	< 0.20	< 0.20	0.90	--	--	--	< 1.00
	5/19/94	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
	8/11/94	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
	11/08/94	8010	< 0.20	< 0.20	< 0.20	0.50	--	--	--	< 1.00
Five Mile										
	8/19/92	8010	< 1.00	< 1.00	< 1.00	< 1.00	--	--	--	< 1.00
	2/22/93	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
D	2/22/93	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
	5/17/93	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
D	5/17/93	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
	8/17/93	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
D	8/17/93	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
	11/16/93	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
D	11/16/93	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
	2/24/94	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00

**Table 2. Results of Chemical Analyses for VOCs in Groundwater
VW&R PSA SI/RA Report**

Location	Sample Date	Test Method	1,1,1-Trichloro ethane	1,1,2-Trichloro ethane	Trichloro ethene	Trichloro fluoro methane	1,2,3-Trichloro propane	1,2,4-Trimethyl benzene	1,3,5-Trimethyl benzene	Vinyl chloride
Five Mile										
D	2/24/94	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
	5/19/94	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
D	5/19/94	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
	8/11/94	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
D	8/11/94	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
	11/08/94	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
Hampton										
	8/19/92	8010	< 1.00	< 1.00	< 1.00	< 1.00	--	--	--	< 1.00
	2/25/93	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
	5/19/93	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
D	5/19/93	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
	8/17/93	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
	11/16/93	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
	2/24/94	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
	5/19/94	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
	8/15/94	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
	11/09/94	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
Five Mile										
	8/19/92	8010	< 1.00	< 1.00	< 1.00	< 1.00	--	--	--	< 1.00
	8/17/93	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
	11/16/93	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
	2/24/94	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
	5/19/94	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
	8/11/94	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
	11/08/94	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
Ancestor										
	8/19/92	8010	< 1.00	< 1.00	< 1.00	< 1.00	--	--	--	< 1.00
D	8/19/92	8010	< 1.00	< 1.00	< 1.00	< 1.00	--	--	--	< 1.00
	2/22/93	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
	5/17/93	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
	8/17/93	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
	11/16/93	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
Five Mile										
	8/19/92	8010	< 1.00	< 1.00	< 1.00	< 1.00	--	--	--	< 1.00
	8/17/93	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
	5/19/94	8010	< 0.20	< 0.20	0.20	< 0.50	--	--	--	< 1.00
Wildwood										
	5/19/94	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
	8/11/94	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
Ash Park Ln(ott)										
	2/18/93	502.2	< 200.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 2.00

Table 2. Results of Chemical Analyses for VOCs In Groundwater
VW&R PSA SI/RA Report

Location	Sample Date	Test Method	1,1,1-Trichloro ethane	1,1,2-Trichloro ethane	Trichloro ethene	Trichloro fluoro methane	1,2,3-Trichloro propane	1,2,4-Trimethyl benzene	1,3,5-Trimethyl benzene	Vinyl chloride
Benjamin	8/21/92	8010	< 1.00	< 1.00	< 1.00	< 1.00	--	--	--	< 1.00
Brookhaven	8/19/92	8010	< 1.00	< 1.00	< 1.00	< 1.00	--	--	--	< 1.00
Brookhaven	8/19/92	8010	< 1.00	< 1.00	< 1.00	< 1.00	--	--	--	< 1.00
Mitchell	8/19/92	8010	< 1.00	< 1.00	< 1.00	< 1.00	--	--	--	< 1.00
Maple Grove	2/22/93	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
	5/17/93	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
	8/17/93	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
	11/16/93	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
	5/19/94	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
	8/11/94	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
D	8/11/94	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
	11/09/94	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
Maple Grove	2/24/93	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
Fairview	8/20/92	8010	< 1.00	< 1.00	< 1.00	< 1.00	--	--	--	< 1.00
Fairview	8/19/92	8010	< 1.00	< 1.00	< 1.00	< 1.00	--	--	--	< 1.00
D	8/19/92	8010	< 1.00	< 1.00	< 1.00	< 1.00	--	--	--	< 1.00
Susan	8/21/92	8010	< 1.00	< 1.00	< 1.00	< 1.00	--	--	--	< 1.00
D	8/21/92	8010	< 1.00	< 1.00	< 1.00	< 1.00	--	--	--	< 1.00
	1/26/93	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
D	1/26/93	8010	< 0.20	< 0.20	0.40	< 0.50	--	--	--	< 1.00
	2/24/93	8010	< 4.00	< 4.00	< 4.00	< 10.00	--	--	--	< 20.00
D	2/24/93	8010	< 4.00	< 4.00	< 4.00	< 10.00	--	--	--	< 20.00
	5/17/93	8010	< 0.20	< 0.20	0.70	< 0.50	--	--	--	< 1.00
D	5/17/93	8010	< 0.20	< 0.20	0.80	< 0.50	--	--	--	< 1.00
	8/17/93	8010	< 0.20	< 0.20	0.40	< 0.50	--	--	--	< 1.00
D	8/17/93	8010	< 0.20	< 0.20	0.40	< 0.50	--	--	--	< 1.00
	11/16/93	8010	< 0.20	< 0.20	0.20	< 0.50	--	--	--	< 1.00
D	11/16/93	8010	< 0.20	< 0.20	0.20	< 0.50	--	--	--	< 1.00
	2/24/94	8010	< 0.20	< 0.20	0.70	< 0.50	--	--	--	< 1.00
D	2/24/94	8010	< 0.20	< 0.20	0.50	< 0.50	--	--	--	< 1.00
	5/19/94	8010	< 0.20	< 0.20	1.00	< 0.50	--	--	--	< 1.00
D	5/19/94	8010	< 0.20	< 0.20	1.20	< 0.50	--	--	--	< 1.00
	8/11/94	8010	< 0.20	< 0.20	0.30	< 0.50	--	--	--	< 1.00

Table 2: Results of Chemical Analyses for VOCs in Groundwater
VW&R PSA SI/RA Report

Location	Sample Date	Test Method	1,1,1-Trichloro ethane	1,1,2-Trichloro ethane	Trichloro ethene	Trichloro fluoro methane	1,2,3-Trichloro propane	1,2,4-Trimethyl benzene	1,3,5-Trimethyl benzene	Vinyl chloride
Susan										
D	8/11/94	8010	< 0.20	< 0.20	0.30	< 0.50	--	--	--	< 1.00
	11/09/94	8010	< 0.20	< 0.20	0.70	< 0.50	--	--	--	< 1.00
D	11/09/94	8010	< 0.20	< 0.20	1.00	< 0.50	--	--	--	< 1.00
Mitchell										
	5/17/93	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
	8/17/93	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
	11/16/93	8010	0.40	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
	2/24/94	8010	0.30	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
	5/19/94	8010	< 0.20	< 0.20	0.50	< 0.50	--	--	--	< 1.00
	8/11/94	8010	0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
	11/09/94	8010	0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
Kimball										
	8/21/92	8010	< 1.00	< 1.00	< 1.00	< 1.00	--	--	--	< 1.00
Mitchell										
	6/25/93	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
D	6/25/93	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
	11/17/93	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
	2/24/94	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
	5/19/94	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
	8/11/94	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
	11/09/94	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
Hampton										
	8/20/92	8010	< 1.00	< 1.00	< 1.00	< 1.00	--	--	--	< 1.00
D	8/20/92	8010	< 1.00	< 1.00	< 1.00	< 1.00	--	--	--	< 1.00
Fairview										
	8/20/92	8010	< 1.00	< 1.00	< 1.00	< 1.00	--	--	--	< 1.00
Sunflower										
	1/11/94	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
D	1/11/94	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
Halstead										
	8/20/92	8010	< 1.00	< 1.00	< 1.00	< 1.00	--	--	--	< 1.00
	2/24/93	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
	5/19/93	8010	< 0.20	< 0.20	< 0.20	0.60	--	--	--	< 1.00
	8/17/93	8010	< 0.20	< 0.20	< 0.20	0.90	--	--	--	< 1.00
	11/16/93	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
	2/24/94	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
	5/19/94	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
	8/11/94	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
	11/08/94	8010	< 0.20	< 0.20	< 0.20	0.90	--	--	--	< 1.00

Location	Sample Date	Test Method	4-Chloro toluene	Dibromo chloro methane	Dibromo chloro propane	1,2-Dibromo ethane	1,2-Dichloro benzene	1,3-Dichloro benzene	1,4-Dichloro benzene	Dichloro difluoro methane
TRIP BLANK										
	8/21/92	8010	--	--	--	--	< 1.00	< 1.00	< 1.00	< 1.00
	1/26/93	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	2/22/93	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	2/24/93	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	2/25/93	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	2/26/93	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	5/17/93	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	5/19/93	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	8/17/93	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	11/16/93	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	12/13/93	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	1/11/94	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	2/24/94	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	4/17/94	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	5/19/94	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	8/11/94	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	8/15/94	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	9/29/94	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--
	11/09/94	8010	--	< 0.20	--	< 0.50	< 0.50	< 0.50	< 0.50	--

Table 2. Results of Chemical Analyses for VOCs in Groundwater
VW&R PSA SI/RA Report

Location	Sample Date	Test Method	1,1-Dichloro ethane	1,2-Dichloro ethane	1,1-Dichloro ethene	cis-1,2-Dichloro ethene	trans-1,2-Dichloro ethene	1,2-Dichloro propane	1,3-Dichloro propane	2,2-Dichloro propane
Mesquite	8/20/92	8010	--	< 1.00	< 1.00	--	< 1.00	< 1.00	--	--
Kimball	9/29/94	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
Maple Grove	9/28/94	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
D	9/28/94	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
Sunflower	8/21/92	8010	--	< 1.00	< 1.00	--	< 1.00	< 1.00	--	--
Fairview	8/19/92	8010	--	< 1.00	< 1.00	--	< 1.00	< 1.00	--	--
Hampton	5/18/93	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
Halstad	9/28/94	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
Fairview	8/19/92	8010	--	< 1.00	< 1.00	--	< 1.00	< 1.00	--	--
W. King Way	4/17/94	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
D	4/17/94	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
Kimball	9/28/94	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
Maple Grove	9/29/94	8010	< 0.20	< 0.20	< 0.20	0.70	< 0.20	< 0.20	--	--
Hampton	8/19/92	8010	--	< 1.00	< 1.00	--	< 1.00	< 1.00	--	--
Mitchell	9/29/94	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
Five Mile	4/01/94	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
D	4/01/94	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
Maple Grove	11/10/94	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--

**Table 2. Results of Chemical Analyses for VOCs in Groundwater
VW&R PSA SI/RA Report**

Location	Sample Date	Test Method	1,1-Dichloro ethane	1,2-Dichloro ethane	1,1-Dichloro ethene	cis-1,2-Dichloro ethene	trans-1,2-Dichloro ethene	1,2-Dichloro propane	1,3-Dichloro propane	2,2-Dichloro propane
Five Mile										
D	12/13/93	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	12/13/93	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	2/24/94	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	5/19/94	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	8/11/94	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	11/09/94	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
Mitchell-House										
	8/20/92	8010	--	< 1.00	< 1.00	--	< 1.00	< 1.00	--	--
	2/24/93	8010	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	--	--
Mitchell-Trailr										
	8/20/92	8010	--	< 1.00	< 1.00	--	< 1.00	< 1.00	--	--
	2/24/93	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	5/17/93	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	8/17/93	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	11/16/93	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	2/24/94	8010	< 0.20	< 0.30	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	5/19/94	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	8/11/94	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	11/08/94	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
Hampton-House										
	8/20/92	8010	--	< 1.00	< 1.00	--	< 1.00	< 1.00	--	--
	2/24/93	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	5/17/93	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
Hampton-IcePlnt										
	8/20/92	8010	--	< 1.00	< 1.00	--	< 1.00	< 1.00	--	--
	2/24/93	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	5/17/93	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	8/17/93	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	11/16/93	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	2/24/94	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	5/19/94	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	8/11/94	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	11/08/94	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
Five Mile										
D	8/19/92	8010	--	< 1.00	< 1.00	--	< 1.00	< 1.00	--	--
	2/22/93	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	2/22/93	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	5/17/93	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	5/17/93	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	8/17/93	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	8/17/93	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	11/16/93	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	11/16/93	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	2/24/94	8010	< 0.20	0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--

Table 2. Results of Chemical Analyses for VOCs in Groundwater
VW&R PSA SI/RA Report

Location	Sample Date	Test Method	1,1-Dichloro ethane	1,2-Dichloro ethane	1,1-Dichloro ethene	cis-1,2-Dichloro ethene	trans-1,2-Dichloro ethene	1,2-Dichloro propane	1,3-Dichloro propane	2,2-Dichloro propane
Five Mile										
D	2/24/94	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	5/19/94	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
D	5/19/94	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	8/11/94	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
D	8/11/94	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	11/08/94	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
Hampton										
	8/19/92	8010	--	< 1.00	< 1.00	--	< 1.00	< 1.00	--	--
	2/25/93	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	5/19/93	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
D	5/19/93	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	8/17/93	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	11/16/93	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	2/24/94	8010	< 0.20	0.40	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	5/19/94	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	8/15/94	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	11/09/94	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
Five Mile										
	8/19/92	8010	--	< 1.00	< 1.00	--	< 1.00	< 1.00	--	--
	8/17/93	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	11/16/93	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	2/24/94	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	5/19/94	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	8/11/94	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	11/08/94	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
Ancestor										
	8/19/92	8010	--	< 1.00	< 1.00	--	< 1.00	< 1.00	--	--
D	8/19/92	8010	--	< 1.00	< 1.00	--	< 1.00	< 1.00	--	--
	2/22/93	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	5/17/93	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	8/17/93	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	11/16/93	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
Five Mile										
	8/19/92	8010	--	< 1.00	< 1.00	--	< 1.00	< 1.00	--	--
	8/17/93	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	5/19/94	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
Wildwood										
	5/19/94	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	8/11/94	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
Ash Park Ln(ott)										
	2/18/93	502.2	< 5.00	< 5.00	< 7.00	< 70.00	< 100.00	< 5.00	< 5.00	< 5.00

**Table 2. Results of Chemical Analyses for VOCs in Groundwater
VW&R PSA SI/RA Report**

Location	Sample Date	Test Method	1,1-Dichloro ethane	1,2-Dichloro ethane	1,1-Dichloro ethene	cis-1,2-Dichloro ethene	trans-1,2-Dichloro ethene	1,2-Dichloro propane	1,3-Dichloro propane	2,2-Dichloro propane
Benjamin	8/21/92	8010	--	< 1.00	< 1.00	--	< 1.00	< 1.00	--	--
Brookhaven	8/19/92	8010	--	< 1.00	< 1.00	--	< 1.00	< 1.00	--	--
Brookhaven	8/19/92	8010	--	< 1.00	< 1.00	--	< 1.00	< 1.00	--	--
Mitchell	8/19/92	8010	--	< 1.00	< 1.00	--	< 1.00	< 1.00	--	--
Maple Grove	2/22/93	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	5/17/93	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	8/17/93	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	11/16/93	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	5/19/94	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	8/11/94	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
D	8/11/94	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	11/09/94	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
Maple Grove	2/24/93	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
Fairview	8/20/92	8010	--	< 1.00	< 1.00	--	< 1.00	< 1.00	--	--
Fairview	8/19/92	8010	--	< 1.00	< 1.00	--	< 1.00	< 1.00	--	--
D	8/19/92	8010	--	< 1.00	< 1.00	--	< 1.00	< 1.00	--	--
Susan	8/21/92	8010	--	< 1.00	< 1.00	--	< 1.00	< 1.00	--	--
D	8/21/92	8010	--	< 1.00	< 1.00	--	< 1.00	< 1.00	--	--
	1/26/93	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
D	1/26/93	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	2/24/93	8010	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	--	--
D	2/24/93	8010	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	--	--
	5/17/93	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
D	5/17/93	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	8/17/93	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
D	8/17/93	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	11/16/93	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
D	11/16/93	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	2/24/94	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
D	2/24/94	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	5/19/94	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
D	5/19/94	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	8/11/94	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--

Table 2. Results of Chemical Analyses for VOCs in Groundwater
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Location	Sample Date	Test Method	1,1-Dichloro ethane	1,2-Dichloro ethane	1,1-Dichloro ethene	cis-1,2-Dichloro ethene	trans-1,2-Dichloro ethene	1,2-Dichloro propane	1,3-Dichloro propane	2,2-Dichloro propane
Susan										
D	8/11/94	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	11/09/94	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
D	11/09/94	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
Mitchell										
	5/17/93	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	8/17/93	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	11/16/93	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	2/24/94	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	5/19/94	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	8/11/94	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	11/09/94	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
Kimball										
	8/21/92	8010	--	< 1.00	< 1.00	--	< 1.00	< 1.00	--	--
Mitchell										
	6/25/93	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
D	6/25/93	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	11/17/93	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	2/24/94	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	5/19/94	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	8/11/94	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	11/09/94	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
Hampton										
	8/20/92	8010	--	< 1.00	< 1.00	--	< 1.00	< 1.00	--	--
D	8/20/92	8010	--	< 1.00	< 1.00	--	< 1.00	< 1.00	--	--
Fairview										
	8/20/92	8010	--	< 1.00	< 1.00	--	< 1.00	< 1.00	--	--
Sunflower										
	1/11/94	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
D	1/11/94	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
Halstead										
	8/20/92	8010	--	< 1.00	< 1.00	--	< 1.00	< 1.00	--	--
	2/24/93	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	5/19/93	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	8/17/93	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	11/16/93	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	2/24/94	8010	< 0.20	0.30	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	5/19/94	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	8/11/94	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	11/08/94	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--

Table 2. Results of Chemical Analyses for VOCs in Groundwater
VW&R PSA SI/RA Report

Location	Sample Date	Test Method	1,1-Dichloro ethane	1,2-Dichloro ethane	1,1-Dichloro ethene	cis-1,2-Dichloro ethene	trans-1,2-Dichloro ethene	1,2-Dichloro propane	1,3-Dichloro propane	2,2-Dichloro propane
Halstead	8/20/92	8010	--	< 1.00	< 1.00	--	< 1.00	< 1.00	--	--
Sunflower	8/21/92	8010	--	< 1.00	< 1.00	--	< 1.00	< 1.00	--	--
Irving	9/28/94	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
Sunflower	8/20/92	8010	--	< 1.00	< 1.00	--	< 1.00	< 1.00	--	--
Chen - MW-01	2/23/93	8010	< 0.20	< 0.20	1.20	< 0.20	< 0.20	< 0.20	--	--
Chen - MW-09	2/23/93	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
EQUIP BLANK	8/21/92	8010	--	< 1.00	< 1.00	--	< 1.00	< 1.00	--	--
	2/25/93	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
FMEW-1	8/15/94	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
D	8/15/94	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
SRM MW-10	2/25/93	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
SRM MW-11	2/25/93	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
SRM MW-19	2/25/93	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
SRM MW-21	2/25/93	8010	< 10.00	< 10.00	< 10.00	< 10.00	< 10.00	< 10.00	--	--
D	2/25/93	8010	< 0.20	< 0.20	< 0.20	1.20	< 0.20	< 0.20	--	--
SRM WP-03	2/25/93	8010	< 0.20	< 0.20	< 0.20	1.40	< 0.20	< 0.20	--	--
Sunrise Well	5/19/94	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	8/11/94	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	11/09/94	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
TRIP BLANK	8/19/92	8010	--	< 1.00	< 1.00	--	< 1.00	< 1.00	--	--
	8/20/92	8010	--	< 1.00	< 1.00	--	< 1.00	< 1.00	--	--

Table 2. Results of Chemical Analyses for VOCs in Groundwater
VW&R PSA SI/RA Report

Location	Sample Date	Test Method	1,1-Dichloro ethane	1,2-Dichloro ethane	1,1-Dichloro ethene	cis-1,2-Dichloro ethene	trans-1,2-Dichloro ethene	1,2-Dichloro propane	1,3-Dichloro propane	2,2-Dichloro propane
TRIP BLANK	8/21/92	8010	--	< 1.00	< 1.00	--	< 1.00	< 1.00	--	--
	1/26/93	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	2/22/93	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	2/24/93	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	2/25/93	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	2/26/93	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	5/17/93	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	5/19/93	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	8/17/93	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	11/16/93	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	12/13/93	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	1/11/94	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	2/24/94	8010	< 0.20	0.30	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	4/17/94	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	5/19/94	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	8/11/94	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	8/15/94	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	9/29/94	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--
	11/09/94	8010	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	--	--

Table 2. Results of Chemical Analyses for VOCs in Groundwater
VW&R PSA SI/RA Report

Location	Sample Date	Test Method	1,1-Dichloro propene	cis-1,3-Dichloro propene	trans-1,3-Dichloro propene	Ethylbenzene	Isopropyl benzene	p-Isopropyl toluene	Methyl ethyl ketone	Methylene bromide
Mesquite	8/20/92	8010	--	< 1.00	< 1.00	--	--	--	< 1.00	--
Kimball	9/29/94	8010	--	< 0.20	< 0.20	--	--	--	--	--
Maple Grove	9/28/94	8010	--	< 0.20	< 0.20	--	--	--	--	--
D	9/28/94	8010	--	< 0.20	< 0.20	--	--	--	--	--
Sunflower	8/21/92	8010	--	< 1.00	< 1.00	--	--	--	< 1.00	--
Fairview	8/19/92	8010	--	< 1.00	< 1.00	--	--	--	< 1.00	--
Hampton	5/18/93	8010	--	< 0.20	< 0.20	--	--	--	--	--
Halstad	9/28/94	8010	--	< 0.20	< 0.20	--	--	--	--	--
Fairview	8/19/92	8010	--	< 1.00	< 1.00	--	--	--	< 1.00	--
W. King Way	4/17/94	8010	--	< 0.20	< 0.20	--	--	--	--	--
D	4/17/94	8010	--	< 0.20	< 0.20	--	--	--	--	--
Kimball	9/28/94	8010	--	< 0.20	< 0.20	--	--	--	--	--
Maple Grove	9/29/94	8010	--	< 0.20	< 0.20	--	--	--	--	--
Hampton	8/19/92	8010	--	< 1.00	< 1.00	--	--	--	< 1.00	--
Mitchell	9/29/94	8010	--	< 0.20	< 0.20	--	--	--	--	--
Five Mile	4/01/94	8010	--	< 0.20	< 0.20	--	--	--	--	--
D	4/01/94	8010	--	< 0.20	< 0.20	--	--	--	--	--
Maple Grove	11/10/94	8010	--	< 0.20	< 0.20	--	--	--	--	--

Table 2. Results of Chemical Analyses for VOCs in Groundwater
VW&R PSA SI/RA Report

Location	Sample Date	Test Method	1,1-Dichloro propene	cis-1,3-Dichloro propene	trans-1,3-Dichloro propene	Ethylbenzene	Isopropyl benzene	p-Isopropyl toluene	Methyl ethyl ketone	Methylene bromide
Five Mile										
	12/13/93	8010	--	< 0.20	< 0.20	--	--	--	--	--
D	12/13/93	8010	--	< 0.20	< 0.20	--	--	--	--	--
	2/24/94	8010	--	< 0.20	< 0.20	--	--	--	--	--
	5/19/94	8010	--	< 0.20	< 0.20	--	--	--	--	--
	8/11/94	8010	--	< 0.20	< 0.20	--	--	--	--	--
	11/09/94	8010	--	< 0.20	< 0.20	--	--	--	--	--
Mitchell-House										
	8/20/92	8010	--	< 1.00	< 1.00	--	--	--	< 1.00	--
	2/24/93	8010	--	< 4.00	< 4.00	--	--	--	--	--
Mitchell-Trailr										
	8/20/92	8010	--	< 1.00	< 1.00	--	--	--	< 1.00	--
	2/24/93	8010	--	< 0.20	< 0.20	--	--	--	--	--
	5/17/93	8010	--	< 0.20	< 0.20	--	--	--	--	--
	8/17/93	8010	--	< 0.20	< 0.20	--	--	--	--	--
	11/16/93	8010	--	< 0.20	< 0.20	--	--	--	--	--
	2/24/94	8010	--	< 0.20	< 0.20	--	--	--	--	--
	5/19/94	8010	--	< 0.20	< 0.20	--	--	--	--	--
	8/11/94	8010	--	< 0.20	< 0.20	--	--	--	--	--
	11/08/94	8010	--	< 0.20	< 0.20	--	--	--	--	--
Hampton-House										
	8/20/92	8010	--	< 1.00	< 1.00	--	--	--	< 1.00	--
	2/24/93	8010	--	< 0.20	< 0.20	--	--	--	--	--
	5/17/93	8010	--	< 0.20	< 0.20	--	--	--	--	--
Hampton-IcePlnt										
	8/20/92	8010	--	< 1.00	< 1.00	--	--	--	< 1.00	--
	2/24/93	8010	--	< 0.20	< 0.20	--	--	--	--	--
	5/17/93	8010	--	< 0.20	< 0.20	--	--	--	--	--
	8/17/93	8010	--	< 0.20	< 0.20	--	--	--	--	--
	11/16/93	8010	--	< 0.20	< 0.20	--	--	--	--	--
	2/24/94	8010	--	< 0.20	< 0.20	--	--	--	--	--
	5/19/94	8010	--	< 0.20	< 0.20	--	--	--	--	--
	8/11/94	8010	--	< 0.20	< 0.20	--	--	--	--	--
	11/08/94	8010	--	< 0.20	< 0.20	--	--	--	--	--
Five Mile										
	8/19/92	8010	--	< 1.00	< 1.00	--	--	--	< 1.00	--
	2/22/93	8010	--	< 0.20	< 0.20	--	--	--	--	--
D	2/22/93	8010	--	< 0.20	< 0.20	--	--	--	--	--
	5/17/93	8010	--	< 0.20	< 0.20	--	--	--	--	--
D	5/17/93	8010	--	< 0.20	< 0.20	--	--	--	--	--
	8/17/93	8010	--	< 0.20	< 0.20	--	--	--	--	--
D	8/17/93	8010	--	< 0.20	< 0.20	--	--	--	--	--
	11/16/93	8010	--	< 0.20	< 0.20	--	--	--	--	--
D	11/16/93	8010	--	< 0.20	< 0.20	--	--	--	--	--
	2/24/94	8010	--	< 0.20	< 0.20	--	--	--	--	--

Table 2. Results of Chemical Analyses for VOCs in Groundwater
VW&R PSA SI/RA Report

Location	Sample Date	Test Method	1,1-Dichloro propene	cis-1,3-Dichloro propene	trans-1,3-Dichloro propene	Ethylbenzene	Isopropyl benzene	p-Isopropyl toluene	Methyl ethyl ketone	Methylene bromide
Five Mile										
D	2/24/94	8010	--	< 0.20	< 0.20	--	--	--	--	--
	5/19/94	8010	--	< 0.20	< 0.20	--	--	--	--	--
D	5/19/94	8010	--	< 0.20	< 0.20	--	--	--	--	--
	8/11/94	8010	--	< 0.20	< 0.20	--	--	--	--	--
D	8/11/94	8010	--	< 0.20	< 0.20	--	--	--	--	--
	11/08/94	8010	--	< 0.20	< 0.20	--	--	--	--	--
Hampton										
	8/19/92	8010	--	< 1.00	< 1.00	--	--	--	< 1.00	--
	2/25/93	8010	--	< 0.20	< 0.20	--	--	--	--	--
	5/19/93	8010	--	< 0.20	< 0.20	--	--	--	--	--
D	5/19/93	8010	--	< 0.20	< 0.20	--	--	--	--	--
	8/17/93	8010	--	< 0.20	< 0.20	--	--	--	--	--
	11/16/93	8010	--	< 0.20	< 0.20	--	--	--	--	--
	2/24/94	8010	--	< 0.20	< 0.20	--	--	--	--	--
	5/19/94	8010	--	< 0.20	< 0.20	--	--	--	--	--
	8/15/94	8010	--	< 0.20	< 0.20	--	--	--	--	--
	11/09/94	8010	--	< 0.20	< 0.20	--	--	--	--	--
Five Mile										
	8/19/92	8010	--	< 1.00	< 1.00	--	--	--	< 1.00	--
	8/17/93	8010	--	< 0.20	< 0.20	--	--	--	--	--
	11/16/93	8010	--	< 0.20	< 0.20	--	--	--	--	--
	2/24/94	8010	--	< 0.20	< 0.20	--	--	--	--	--
	5/19/94	8010	--	< 0.20	< 0.20	--	--	--	--	--
	8/11/94	8010	--	< 0.20	< 0.20	--	--	--	--	--
	11/08/94	8010	--	< 0.20	< 0.20	--	--	--	--	--
Ancestor										
	8/19/92	8010	--	< 1.00	< 1.00	--	--	--	< 1.00	--
D	8/19/92	8010	--	< 1.00	< 1.00	--	--	--	< 1.00	--
	2/22/93	8010	--	< 0.20	< 0.20	--	--	--	--	--
	5/17/93	8010	--	< 0.20	< 0.20	--	--	--	--	--
	8/17/93	8010	--	< 0.20	< 0.20	--	--	--	--	--
	11/16/93	8010	--	< 0.20	< 0.20	--	--	--	--	--
Five Mile										
	8/19/92	8010	--	< 1.00	< 1.00	--	--	--	< 1.00	--
	8/17/93	8010	--	< 0.20	< 0.20	--	--	--	--	--
	5/19/94	8010	--	< 0.20	< 0.20	--	--	--	--	--
Wildwood										
	5/19/94	8010	--	< 0.20	< 0.20	--	--	--	--	--
	8/11/94	8010	--	< 0.20	< 0.20	--	--	--	--	--
Ash Park Ln(ott)										
	2/18/93	502.2	< 5.00	< 5.00	< 5.00	< 700.00	< 5.00	< 5.00	--	< 5.00

Table 2. Results of Chemical Analyses for VOCs in Groundwater
VW&R PSA SI/RA Report

Location	Sample Date	Test Method	1,1-Dichloro propene	cis-1,3-Dichloro propene	trans-1,3-Dichloro propene	Ethylbenzene	Isopropyl benzene	p-Isopropyl toluene	Methyl ethyl ketone	Methylene bromide
Benjamin	8/21/92	8010	--	< 1.00	< 1.00	--	--	--	< 1.00	--
Brookhaven	8/19/92	8010	--	< 1.00	< 1.00	--	--	--	< 1.00	--
Brookhaven	8/19/92	8010	--	< 1.00	< 1.00	--	--	--	< 1.00	--
Mitchell	8/19/92	8010	--	< 1.00	< 1.00	--	--	--	< 1.00	--
Maple Grove	2/22/93	8010	--	< 0.20	< 0.20	--	--	--	--	--
	5/17/93	8010	--	< 0.20	< 0.20	--	--	--	--	--
	8/17/93	8010	--	< 0.20	< 0.20	--	--	--	--	--
	11/16/93	8010	--	< 0.20	< 0.20	--	--	--	--	--
	5/19/94	8010	--	< 0.20	< 0.20	--	--	--	--	--
	8/11/94	8010	--	< 0.20	< 0.20	--	--	--	--	--
D	8/11/94	8010	--	< 0.20	< 0.20	--	--	--	--	--
	11/09/94	8010	--	< 0.20	< 0.20	--	--	--	--	--
Maple Grove	2/24/93	8010	--	< 0.20	< 0.20	--	--	--	--	--
Fairview	8/20/92	8010	--	< 1.00	< 1.00	--	--	--	< 1.00	--
Fairview	8/19/92	8010	--	< 1.00	< 1.00	--	--	--	< 1.00	--
D	8/19/92	8010	--	< 1.00	< 1.00	--	--	--	< 1.00	--
Susan	8/21/92	8010	--	< 1.00	< 1.00	--	--	--	< 1.00	--
D	8/21/92	8010	--	< 1.00	< 1.00	--	--	--	< 1.00	--
	1/26/93	8010	--	< 0.20	< 0.20	--	--	--	--	--
D	1/26/93	8010	--	< 0.20	< 0.20	--	--	--	--	--
	2/24/93	8010	--	< 4.00	< 4.00	--	--	--	--	--
D	2/24/93	8010	--	< 4.00	< 4.00	--	--	--	--	--
	5/17/93	8010	--	< 0.20	< 0.20	--	--	--	--	--
D	5/17/93	8010	--	< 0.20	< 0.20	--	--	--	--	--
	8/17/93	8010	--	< 0.20	< 0.20	--	--	--	--	--
D	8/17/93	8010	--	< 0.20	< 0.20	--	--	--	--	--
	11/16/93	8010	--	< 0.20	< 0.20	--	--	--	--	--
D	11/16/93	8010	--	< 0.20	< 0.20	--	--	--	--	--
	2/24/94	8010	--	< 0.20	< 0.20	--	--	--	--	--
D	2/24/94	8010	--	< 0.20	< 0.20	--	--	--	--	--
	5/19/94	8010	--	< 0.20	< 0.20	--	--	--	--	--
D	5/19/94	8010	--	< 0.20	< 0.20	--	--	--	--	--
	8/11/94	8010	--	< 0.20	< 0.20	--	--	--	--	--

Table 2. Results of Chemical Analyses for VOCs in Groundwater
VW&R PSA SI/RA Report

Location	Sample Date	Test Method	1,1-Dichloro propene	cis-1,3-Dichloro propene	trans-1,3-Dichloro propene	Ethylbenzene	Isopropyl benzene	p-Isopropyl toluene	Methyl ethyl ketone	Methylene bromide
Susan										
D	8/11/94	8010	--	< 0.20	< 0.20	--	--	--	--	--
	11/09/94	8010	--	< 0.20	< 0.20	--	--	--	--	--
D	11/09/94	8010	--	< 0.20	< 0.20	--	--	--	--	--
Mitchell										
	5/17/93	8010	--	< 0.20	< 0.20	--	--	--	--	--
	8/17/93	8010	--	< 0.20	< 0.20	--	--	--	--	--
	11/16/93	8010	--	< 0.20	< 0.20	--	--	--	--	--
	2/24/94	8010	--	< 0.20	< 0.20	--	--	--	--	--
	5/19/94	8010	--	< 0.20	< 0.20	--	--	--	--	--
	8/11/94	8010	--	< 0.20	< 0.20	--	--	--	--	--
	11/09/94	8010	--	< 0.20	< 0.20	--	--	--	--	--
Kimball										
	8/21/92	8010	--	< 1.00	< 1.00	--	--	--	< 1.00	--
Mitchell										
	6/25/93	8010	--	< 0.20	< 0.20	--	--	--	--	--
D	6/25/93	8010	--	< 0.20	< 0.20	--	--	--	--	--
	11/17/93	8010	--	< 0.20	< 0.20	--	--	--	--	--
	2/24/94	8010	--	< 0.20	< 0.20	--	--	--	--	--
	5/19/94	8010	--	< 0.20	< 0.20	--	--	--	--	--
	8/11/94	8010	--	< 0.20	< 0.20	--	--	--	--	--
	11/09/94	8010	--	< 0.20	< 0.20	--	--	--	--	--
Hampton										
	8/20/92	8010	--	< 1.00	< 1.00	--	--	--	< 1.00	--
D	8/20/92	8010	--	< 1.00	< 1.00	--	--	--	< 1.00	--
Fairview										
	8/20/92	8010	--	< 1.00	< 1.00	--	--	--	< 1.00	--
Sunflower										
	1/11/94	8010	--	< 0.20	< 0.20	--	--	--	--	--
D	1/11/94	8010	--	< 0.20	< 0.20	--	--	--	--	--
Halstead										
	8/20/92	8010	--	< 1.00	< 1.00	--	--	--	< 1.00	--
	2/24/93	8010	--	< 0.20	< 0.20	--	--	--	--	--
	5/19/93	8010	--	< 0.20	< 0.20	--	--	--	--	--
	8/17/93	8010	--	< 0.20	< 0.20	--	--	--	--	--
	11/16/93	8010	--	< 0.20	< 0.20	--	--	--	--	--
	2/24/94	8010	--	< 0.20	< 0.20	--	--	--	--	--
	5/19/94	8010	--	< 0.20	< 0.20	--	--	--	--	--
	8/11/94	8010	--	< 0.20	< 0.20	--	--	--	--	--
	11/08/94	8010	--	< 0.20	< 0.20	--	--	--	--	--

Table 2. Results of Chemical Analyses for VOCs in Groundwater
VW&R PSA SI/RA Report

Location	Sample Date	Test Method	1,1-Dichloro propene	cis-1,3-Dichloro propene	trans-1,3-Dichloro propene	Ethylbenzene	Isopropyl benzene	p-Isopropyl toluene	Methyl ethyl ketone	Methylene bromide
Halstead	8/20/92	8010	--	< 1.00	< 1.00	--	--	--	< 1.00	--
Sunflower	8/21/92	8010	--	< 1.00	< 1.00	--	--	--	< 1.00	--
Irving	9/28/94	8010	--	< 0.20	< 0.20	--	--	--	--	--
Sunflower	8/20/92	8010	--	< 1.00	< 1.00	--	--	--	< 1.00	--
Chen - MW-01	2/23/93	8010	--	< 0.20	< 0.20	--	--	--	--	--
Chen - MW-09	2/23/93	8010	--	< 0.20	< 0.20	--	--	--	--	--
EQUIP BLANK	8/21/92	8010	--	< 1.00	< 1.00	--	--	--	< 1.00	--
	2/25/93	8010	--	< 0.20	< 0.20	--	--	--	--	--
FMEW-1	8/15/94	8010	--	< 0.20	< 0.20	--	--	--	--	--
D	8/15/94	8010	--	< 0.20	< 0.20	--	--	--	--	--
SRM MW-10	2/25/93	8010	--	< 0.20	< 0.20	--	--	--	--	--
SRM MW-11	2/25/93	8010	--	< 0.20	< 0.20	--	--	--	--	--
SRM MW-19	2/25/93	8010	--	< 0.20	< 0.20	--	--	--	--	--
SRM MW-21	2/25/93	8010	--	< 10.00	< 10.00	--	--	--	--	--
D	2/25/93	8010	--	< 0.20	< 0.20	--	--	--	--	--
SRM WP-03	2/25/93	8010	--	< 0.20	< 0.20	--	--	--	--	--
Sunrise Well	5/19/94	8010	--	< 0.20	< 0.20	--	--	--	--	--
	8/11/94	8010	--	< 0.20	< 0.20	--	--	--	--	--
	11/09/94	8010	--	< 0.20	< 0.20	--	--	--	--	--
TRIP BLANK	8/19/92	8010	--	< 1.00	< 1.00	--	--	--	< 1.00	--
	8/20/92	8010	--	< 1.00	< 1.00	--	--	--	< 1.00	--

Table 2. Results of Chemical Analyses for VOCs in Groundwater
VW&R PSA SI/RA Report

Location	Sample Date	Test Method	1,1-Dichloro propene	cis-1,3-Dichloro propene	trans-1,3-Dichloro propene	Ethylbenzene	Isopropyl benzene	p-Isopropyl toluene	Methyl ethyl ketone	Methylene bromide
TRIP BLANK										
	8/21/92	8010	--	< 1.00	< 1.00	--	--	--	< 1.00	--
	1/26/93	8010	--	< 0.20	< 0.20	--	--	--	--	--
	2/22/93	8010	--	< 0.20	< 0.20	--	--	--	--	--
	2/24/93	8010	--	< 0.20	< 0.20	--	--	--	--	--
	2/25/93	8010	--	< 0.20	< 0.20	--	--	--	--	--
	2/26/93	8010	--	< 0.20	< 0.20	--	--	--	--	--
	5/17/93	8010	--	< 0.20	< 0.20	--	--	--	--	--
	5/19/93	8010	--	< 0.20	< 0.20	--	--	--	--	--
	8/17/93	8010	--	< 0.20	< 0.20	--	--	--	--	--
	11/16/93	8010	--	< 0.20	< 0.20	--	--	--	--	--
	12/13/93	8010	--	< 0.20	< 0.20	--	--	--	--	--
	1/11/94	8010	--	< 0.20	< 0.20	--	--	--	--	--
	2/24/94	8010	--	< 0.20	< 0.20	--	--	--	--	--
	4/17/94	8010	--	< 0.20	< 0.20	--	--	--	--	--
	5/19/94	8010	--	< 0.20	< 0.20	--	--	--	--	--
	8/11/94	8010	--	< 0.20	< 0.20	--	--	--	--	--
	8/15/94	8010	--	< 0.20	< 0.20	--	--	--	--	--
	9/29/94	8010	--	< 0.20	< 0.20	--	--	--	--	--
	11/09/94	8010	--	< 0.20	< 0.20	--	--	--	--	--

Table 2. Results of Chemical Analyses for VOCs in Groundwater
VW&R PSA SI/RA Report

Location	Sample Date	Test Method	Methylene chloride	n-Propyl benzene	Styrene	1,1,1,2-Tetrachloro ethane	1,1,2,2-Tetrachloro ethane	Tetrachloro ethylene	Toluene	1,2,3-Trichloro benzene
Mesquite	8/20/92	8010	< 1.00	--	--	< 1.00	< 1.00	< 1.00	--	--
Kimball	9/29/94	8010	< 2.00	--	--	--	< 0.20	2.10	--	--
Maple Grove	9/28/94	8010	< 2.00	--	--	--	< 0.20	< 0.20	--	--
D	9/28/94	8010	< 2.00	--	--	--	< 0.20	< 0.20	--	--
Sunflower	8/21/92	8010	< 1.00	--	--	< 1.00	< 1.00	< 1.00	--	--
Fairview	8/19/92	8010	< 1.00	--	--	< 1.00	< 1.00	< 1.00	--	--
Hampton	5/18/93	8010	< 2.00	--	--	--	< 0.20	< 0.20	--	--
Halstad	9/28/94	8010	< 2.00	--	--	--	< 0.20	< 0.20	--	--
Fairview	8/19/92	8010	< 1.00	--	--	< 1.00	< 1.00	< 1.00	--	--
W. King Way	4/17/94	8010	< 2.00	--	--	--	< 0.20	< 0.20	--	--
D	4/17/94	8010	< 2.00	--	--	--	< 0.20	< 0.20	--	--
Kimball	9/28/94	8010	< 2.00	--	--	--	< 0.20	4.20	--	--
Maple Grove	9/29/94	8010	< 2.00	--	--	--	< 0.20	390.00	--	--
Hampton	8/19/92	8010	< 1.00	--	--	< 1.00	< 1.00	< 1.00	--	--
Mitchell	9/29/94	8010	< 2.00	--	--	--	< 0.20	1.60	--	--
Five Mile	4/01/94	8010	< 2.00	--	--	--	< 0.20	< 0.20	--	--
D	4/01/94	8010	< 2.10 U1	--	--	--	< 0.20	< 0.20	--	--
Maple Grove	11/10/94	8010	< 2.00	--	--	--	< 0.20	130.00	--	--

Table 2. Results of Chemical Analyses for VOCs in Groundwater
VW&R PSA SI/RA Report

Location	Sample Date	Test Method	Methylene chloride	n-Propyl benzene	Styrene	1,1,1,2-Tetrachloro ethane	1,1,2,2-Tetrachloro ethane	Tetrachloro ethylene	Toluene	1,2,3-Trichloro benzene
Five Mile	12/13/93	8010	< 2.00	--	--	--	< 0.20	0.50	--	--
D	12/13/93	8010	< 2.00	--	--	--	< 0.20	0.50	--	--
	2/24/94	8010	< 2.00	--	--	--	< 0.20	0.40	--	--
	5/19/94	8010	< 2.00	--	--	--	< 0.20	1.80	--	--
	8/11/94	8010	< 2.00	--	--	--	< 0.20	0.50	--	--
	11/09/94	8010	3.70	--	--	--	< 0.20	0.50	--	--
Mitchell-House	8/20/92	8010	< 1.00	--	--	< 1.00	< 1.00	30.00 J5	--	--
	2/24/93	8010	< 40.00	--	--	--	< 4.00	35.00	--	--
Mitchell-Trailr	8/20/92	8010	< 1.00	--	--	< 1.00	< 1.00	4.00 J5	--	--
	2/24/93	8010	< 2.00	--	--	--	< 0.20	4.30	--	--
	5/17/93	8010	< 2.00	--	--	--	< 0.20	4.60	--	--
	8/17/93	8010	< 2.00	--	--	--	< 0.20	5.10	--	--
	11/16/93	8010	< 2.00	--	--	--	< 0.20	5.70	--	--
	2/24/94	8010	< 2.00	--	--	--	< 0.20	4.70	--	--
	5/19/94	8010	< 2.00	--	--	--	< 0.20	5.50	--	--
	8/11/94	8010	< 2.00	--	--	--	< 0.20	3.40	--	--
	11/08/94	8010	< 2.00	--	--	--	< 0.20	5.80	--	--
Hampton-House	8/20/92	8010	< 1.00	--	--	< 1.00	< 1.00	9.40	--	--
	2/24/93	8010	< 2.00	--	--	--	< 0.20	8.70	--	--
	5/17/93	8010	< 2.00	--	--	--	< 0.20	10.00	--	--
Hampton-IcePlnt	8/20/92	8010	< 1.00	--	--	< 1.00	< 1.00	1.90 J5	--	--
	2/24/93	8010	< 2.00	--	--	--	< 0.20	1.00	--	--
	5/17/93	8010	< 2.00	--	--	--	< 0.20	1.40	--	--
	8/17/93	8010	< 2.00	--	--	--	< 0.20	2.00	--	--
	11/16/93	8010	< 2.00	--	--	--	< 0.20	1.70	--	--
	2/24/94	8010	< 2.00	--	--	--	< 0.20	1.30	--	--
	5/19/94	8010	< 2.00	--	--	--	< 0.20	1.60	--	--
	8/11/94	8010	< 2.00	--	--	--	< 0.20	1.80	--	--
	11/08/94	8010	< 2.00	--	--	--	< 0.20	2.00	--	--
Five Mile	8/19/92	8010	< 1.00	--	--	< 1.00	< 1.00	3.90 J5	--	--
	2/22/93	8010	< 2.00	--	--	--	< 0.20	4.60	--	--
D	2/22/93	8010	< 2.00	--	--	--	< 0.20	3.60	--	--
	5/17/93	8010	< 2.00	--	--	--	< 0.20	5.70	--	--
D	5/17/93	8010	< 2.00	--	--	--	< 0.20	6.10	--	--
	8/17/93	8010	< 2.00	--	--	--	< 0.20	3.90	--	--
D	8/17/93	8010	< 2.00	--	--	--	< 0.20	4.20	--	--
	11/16/93	8010	< 2.00	--	--	--	< 0.20	5.80	--	--
D	11/16/93	8010	< 2.00	--	--	--	< 0.20	6.60	--	--
	2/24/94	8010	< 2.00	--	--	--	< 0.20	4.00	--	--

Table 2. Results of Chemical Analyses for VOCs in Groundwater
VW&R PSA SI/RA Report

Location	Sample Date	Test Method	Methylene chloride	n-Propyl benzene	Styrene	1,1,1,2-Tetrachloro ethane	1,1,2,2-Tetrachloro ethane	Tetrachloro ethylene	Toluene	1,2,3-Trichloro benzene
Five Mile										
D	2/24/94	8010	< 2.00	--	--	--	< 0.20	4.00	--	--
	5/19/94	8010	< 2.00	--	--	--	< 0.20	3.50	--	--
D	5/19/94	8010	< 2.00	--	--	--	< 0.20	3.10	--	--
	8/11/94	8010	< 2.00	--	--	--	< 0.20	2.60	--	--
D	8/11/94	8010	< 2.00	--	--	--	< 0.20	2.50	--	--
	11/08/94	8010	< 2.00	--	--	--	< 0.20	2.70	--	--
Hampton										
	8/19/92	8010	< 1.00	--	--	< 1.00	< 1.00	3.70 J5	--	--
	2/25/93	8010	< 2.00	--	--	--	< 0.20	2.50	--	--
D	5/19/93	8010	< 2.00	--	--	--	< 0.20	3.10	--	--
	5/19/93	8010	< 2.00	--	--	--	< 0.20	3.30	--	--
	8/17/93	8010	< 2.00	--	--	--	< 0.20	3.30	--	--
	11/16/93	8010	< 2.00	--	--	--	< 0.20	2.40	--	--
	2/24/94	8010	< 2.00	--	--	--	< 0.20	1.60	--	--
	5/19/94	8010	< 2.00	--	--	--	< 0.20	2.10	--	--
	8/15/94	8010	< 2.00	--	--	--	< 0.20	1.40	--	--
	11/09/94	8010	< 2.00	--	--	--	< 0.20	1.90	--	--
Five Mile										
	8/19/92	8010	< 1.00	--	--	< 1.00	< 1.00	< 1.00	--	--
	8/17/93	8010	< 2.00	--	--	--	< 0.20	< 0.20	--	--
	11/16/93	8010	< 2.00	--	--	--	< 0.20	< 0.20	--	--
	2/24/94	8010	< 2.00	--	--	--	< 0.20	< 0.20	--	--
	5/19/94	8010	< 2.00	--	--	--	< 0.20	< 0.20	--	--
	8/11/94	8010	< 2.00	--	--	--	< 0.20	< 0.20	--	--
	11/08/94	8010	< 2.00	--	--	--	< 0.20	< 0.20	--	--
Ancestor										
D	8/19/92	8010	< 1.00	--	--	< 1.00	< 1.00	1.70 J5	--	--
	8/19/92	8010	< 1.00	--	--	< 1.00	< 1.00	1.60 J5	--	--
	2/22/93	8010	< 2.00	--	--	--	< 0.20	0.20	--	--
	5/17/93	8010	< 2.00	--	--	--	< 0.20	0.80	--	--
	8/17/93	8010	< 2.00	--	--	--	< 0.20	1.30	--	--
	11/16/93	8010	< 2.00	--	--	--	< 0.20	1.40	--	--
Five Mile										
	8/19/92	8010	< 1.00	--	--	< 1.00	< 1.00	< 1.00	--	--
	8/17/93	8010	< 2.00	--	--	--	< 0.20	0.40	--	--
	5/19/94	8010	< 2.00	--	--	--	< 0.20	1.30	--	--
Wildwood										
	5/19/94	8010	< 2.00	--	--	--	< 0.20	< 0.20	--	--
	8/11/94	8010	< 2.00	--	--	--	< 0.20	< 0.20	--	--
Ash Park Ln(ott)										
	2/18/93	502.2	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	1.48 C1	< 5.00	< 2000.00

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Location	Sample Date	Test Method	Methylene chloride	n-Propyl benzene	Styrene	1,1,1,2-Tetrachloro ethane	1,1,2,2-Tetrachloro ethane	Tetrachloro ethylene	Toluene	1,2,3-Trichloro benzene
Benjamin	8/21/92	8010	< 1.00	--	--	< 1.00	< 1.00	16.00	--	--
Brookhaven	8/19/92	8010	< 1.00	--	--	< 1.00	< 1.00	< 1.00	--	--
Brookhaven	8/19/92	8010	< 1.00	--	--	< 1.00	< 1.00	< 1.00	--	--
Mitchell	8/19/92	8010	< 1.00	--	--	< 1.00	< 1.00	< 1.00	--	--
Maple Grove	2/22/93	8010	< 2.00	--	--	--	< 0.20	< 0.20	--	--
	5/17/93	8010	< 2.00	--	--	--	< 0.20	2.40	--	--
	8/17/93	8010	< 2.00	--	--	--	< 0.20	< 0.20	--	--
	11/16/93	8010	< 2.00	--	--	--	< 0.20	< 0.20	--	--
	5/19/94	8010	< 2.00	--	--	--	< 0.20	6.30	--	--
	8/11/94	8010	< 2.00	--	--	--	< 0.20	4.60	--	--
D	8/11/94	8010	< 2.00	--	--	--	< 0.20	4.40	--	--
	11/09/94	8010	< 2.00	--	--	--	< 0.20	0.90	--	--
Maple Grove	2/24/93	8010	< 2.00	--	--	--	< 0.20	5.90	--	--
Fairview	8/20/92	8010	< 1.00	--	--	< 1.00	< 1.00	< 1.00	--	--
Fairview	8/19/92	8010	< 1.00	--	--	< 1.00	< 1.00	< 1.00	--	--
D	8/19/92	8010	< 1.00	--	--	< 1.00	< 1.00	< 1.00	--	--
Susan	8/21/92	8010	< 1.00	--	--	< 1.00	< 1.00	750.00	--	--
D	8/21/92	8010	< 1.00	--	--	< 1.00	< 1.00	700.00	--	--
	1/26/93	8010	< 2.00	--	--	--	< 0.20	180.00	--	--
D	1/26/93	8010	< 2.00	--	--	--	< 0.20	200.00	--	--
	2/24/93	8010	< 40.00	--	--	--	< 4.00	210.00	--	--
D	2/24/93	8010	< 40.00	--	--	--	< 4.00	230.00	--	--
	5/17/93	8010	< 2.00	--	--	--	< 0.20	390.00	--	--
D	5/17/93	8010	< 2.00	--	--	--	< 0.20	360.00	--	--
	8/17/93	8010	< 2.00	--	--	--	< 0.20	150.00	--	--
D	8/17/93	8010	< 2.00	--	--	--	< 0.20	150.00	--	--
	11/16/93	8010	< 2.00	--	--	--	< 0.20	260.00	--	--
D	11/16/93	8010	< 2.00	--	--	--	< 0.20	230.00	--	--
	2/24/94	8010	< 2.00	--	--	--	< 0.20	340.00	--	--
D	2/24/94	8010	< 2.00	--	--	--	< 0.20	330.00	--	--
	5/19/94	8010	< 2.00	--	--	--	< 0.20	210.00	--	--
D	5/19/94	8010	< 2.00	--	--	--	< 0.20	190.00	--	--
	8/11/94	8010	< 2.00	--	--	--	< 0.20	230.00	--	--

Table 2. Results of Chemical Analyses for VOCs in Groundwater
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Location	Sample Date	Test Method	Methylene chloride	n-Propyl benzene	Styrene	1,1,1,2-Tetrachloro ethane	1,1,2,2-Tetrachloro ethane	Tetrachloro ethylene	Toluene	1,2,3-Trichloro benzene
Susan										
D	8/11/94	8010	< 2.00	--	--	--	< 0.20	270.00	--	--
	11/09/94	8010	< 2.00	--	--	--	< 0.20	260.00	--	--
D	11/09/94	8010	< 2.00	--	--	--	< 0.20	210.00	--	--
Mitchell										
	5/17/93	8010	< 2.00	--	--	--	< 0.20	0.50	--	--
	8/17/93	8010	< 2.00	--	--	--	< 0.20	0.60	--	--
	11/16/93	8010	< 2.00	--	--	--	< 0.20	0.80	--	--
	2/24/94	8010	< 2.00	--	--	--	< 0.20	0.70	--	--
	5/19/94	8010	< 2.00	--	--	--	< 0.20	2.40	--	--
	8/11/94	8010	< 2.00	--	--	--	< 0.20	0.50	--	--
	11/09/94	8010	< 2.00	--	--	--	< 0.20	0.50	--	--
Kimball										
	8/21/92	8010	< 1.00	--	--	< 1.00	< 1.00	< 1.00	--	--
Mitchell										
	6/25/93	8010	< 2.00	--	--	--	< 0.20	0.20	--	--
D	6/25/93	8010	< 2.00	--	--	--	< 0.20	0.20	--	--
	11/17/93	8010	< 2.00	--	--	--	< 0.20	0.30	--	--
	2/24/94	8010	< 2.00	--	--	--	< 0.20	0.30	--	--
	5/19/94	8010	< 2.00	--	--	--	< 0.20	0.50	--	--
	8/11/94	8010	< 2.00	--	--	--	< 0.20	0.40	--	--
	11/09/94	8010	< 2.00	--	--	--	< 0.20	0.30	--	--
Hampton										
	8/20/92	8010	< 1.00	--	--	< 1.00	< 1.00	< 1.00	--	--
D	8/20/92	8010	< 1.00	--	--	< 1.00	< 1.00	< 1.00	--	--
Fairview										
	8/20/92	8010	< 1.00	--	--	< 1.00	< 1.00	6.40	--	--
Sunflower										
	1/11/94	8010	< 2.00	--	--	--	< 0.20	< 0.20	--	--
D	1/11/94	8010	< 2.00	--	--	--	< 0.20	< 0.20	--	--
Halstead										
	8/20/92	8010	< 1.00	--	--	< 1.00	< 1.00	< 1.00	--	--
	2/24/93	8010	< 2.00	--	--	--	< 0.20	1.00	--	--
	5/19/93	8010	< 2.00	--	--	--	< 0.20	0.60	--	--
	8/17/93	8010	< 2.00	--	--	--	< 0.20	0.70	--	--
	11/16/93	8010	< 2.00	--	--	--	< 0.20	1.20	--	--
	2/24/94	8010	< 2.00	--	--	--	< 0.20	0.80	--	--
	5/19/94	8010	< 2.00	--	--	--	< 0.20	1.80	--	--
	8/11/94	8010	< 2.00	--	--	--	< 0.20	0.80	--	--
	11/08/94	8010	< 2.00	--	--	--	< 0.20	1.40	--	--

Table 2: Results of Chemical Analyses for VOCs in Groundwater
VW&R PSA SI/RA Report

Location	Sample Date	Test Method	Methylene chloride	n-Propyl benzene	Styrene	1,1,1,2-Tetrachloro ethane	1,1,2,2-Tetrachloro ethane	Tetrachloro ethylene	Toluene	1,2,3-Trichloro benzene
Halstead	8/20/92	8010	< 1.00	--	--	< 1.00	< 1.00	2.60	--	--
Sunflower	8/21/92	8010	< 1.00	--	--	< 1.00	< 1.00	< 1.00	--	--
Irving	9/28/94	8010	< 2.00	--	--	--	< 0.20	0.80	--	--
Sunflower	8/20/92	8010	< 1.00	--	--	< 1.00	< 1.00	< 1.00	--	--
Chen - MW-01	2/23/93	8010	< 2.00	--	--	--	< 0.20	< 0.20	--	--
Chen - MW-09	2/23/93	8010	< 2.00	--	--	--	< 0.20	0.60	--	--
EQUIP BLANK	5/01/92	601	--	--	--	--	--	< 0.50	--	--
	8/01/92	601	--	--	--	--	--	< 0.50	--	--
	8/21/92	8010	< 1.00	--	--	< 1.00	< 1.00	< 1.00	--	--
	2/01/93	601	--	--	--	--	--	< 0.50	--	--
	2/25/93	8010	< 2.00	--	--	--	< 0.20	< 0.20	--	--
	5/25/93	601	--	--	--	--	--	1.40 C1	--	--
	8/25/93	601	--	--	--	--	--	< 0.50 C1	--	--
	11/23/93	601	--	--	--	--	--	< 0.50 C1	--	--
FMEW-1	8/15/94	8010	< 2.00	--	--	--	< 0.20	1.50	--	--
D	8/15/94	8010	< 2.00	--	--	--	< 0.20	1.70	--	--
SRM MW-09	5/01/92	601	--	--	--	--	--	190.00 C1	--	--
	8/01/92	601	--	--	--	--	--	130.00 C1	--	--
	2/01/93	601	--	--	--	--	--	1170.00 C1	--	--
	5/25/93	601	--	--	--	--	--	1680.00 C1	--	--
D	5/25/93	601	--	--	--	--	--	1440.00 C1	--	--
	8/25/93	601	--	--	--	--	--	1380.00 C1	--	--
D	8/25/93	601	--	--	--	--	--	1420.00 C1	--	--
	11/23/93	601	--	--	--	--	--	1070.00 C1	--	--
D	11/23/93	601	--	--	--	--	--	1060.00 C1	--	--
	2/01/94	601	--	--	--	--	--	610.00 C1	--	--
SRM MW-10	2/25/93	8010	< 2.00	--	--	--	< 0.20	0.50	--	--
SRM MW-11	8/01/92	601	--	--	--	--	--	11.20 C1	--	--
	2/01/93	601	--	--	--	--	--	1.70 C1	--	--

**Table 2. Results of Chemical Analyses for VOCs in Groundwater
VW&R PSA SI/RA Report**

Location	Sample Date	Test Method	1,1,1-Trichloro ethane	1,1,2-Trichloro ethane	Trichloro ethene	Trichloro fluoro methane	1,2,3-Trichloro propane	1,2,4-Trimethyl benzene	1,3,5-Trimethyl benzene	Vinyl chloride
Halstead	8/20/92	8010	< 1.00	< 1.00	< 1.00	< 1.00	--	--	--	< 1.00
Sunflower	8/21/92	8010	< 1.00	< 1.00	< 1.00	< 1.00	--	--	--	< 1.00
Irving	9/28/94	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
Sunflower	8/20/92	8010	< 1.00	< 1.00	< 1.00	< 1.00	--	--	--	< 1.00
Chen - MW-01	2/23/93	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
Chen - MW-09	2/23/93	8010	0.40	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
EQUIP BLANK	5/01/92	601	--	--	< 0.50	--	--	--	--	--
	8/01/92	601	--	--	< 0.50	--	--	--	--	--
	8/21/92	8010	< 1.00	< 1.00	< 1.00	< 1.00	--	--	--	< 1.00
	2/01/93	601	--	--	< 0.50	--	--	--	--	--
	2/25/93	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
	5/25/93	601	--	--	< 0.50	--	--	--	--	--
	8/25/93	601	--	--	< 0.50 C1	--	--	--	--	--
	11/23/93	601	--	--	< 0.50 C1	--	--	--	--	--
FMEW-1	8/15/94	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
D	8/15/94	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
SRM MW-09	5/01/92	601	--	--	0.90 C1	--	--	--	--	--
	8/01/92	601	--	--	1.10 C1	--	--	--	--	--
	2/01/93	601	--	--	8.40 C1	--	--	--	--	--
	5/25/93	601	--	--	9.20 C1	--	--	--	--	--
D	5/25/93	601	--	--	9.40 C1	--	--	--	--	--
	8/25/93	601	--	--	7.70 C1	--	--	--	--	--
D	8/25/93	601	--	--	7.80 C1	--	--	--	--	--
	11/23/93	601	--	--	6.90 C1	--	--	--	--	--
D	11/23/93	601	--	--	6.90 C1	--	--	--	--	--
SRM MW-10	2/25/93	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
SRM MW-11	8/01/92	601	--	--	< 0.50	--	--	--	--	--
	2/01/93	601	--	--	< 0.50	--	--	--	--	--
	2/25/93	8010	0.90	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00

Table 2. Results of Chemical Analyses for VOCs in Groundwater
VW&R PSA SI/RA Report

Location	Sample Date	Test Method	1,1,1-Trichloro ethane	1,1,2-Trichloro ethane	Trichloro ethene	Trichloro fluoro methane	1,2,3-Trichloro propane	1,2,4-Trimethyl benzene	1,3,5-Trimethyl benzene	Vinyl chloride
SRM MW-11	5/25/93	601	--	--	< 0.50	--	--	--	--	--
	8/25/93	601	--	--	< 0.50 C1	--	--	--	--	--
SRM MW-16	5/01/92	601	--	--	0.80 C1	--	--	--	--	--
	8/01/92	601	--	--	1.40 C1	--	--	--	--	--
	5/25/93	601	--	--	1.90 C1	--	--	--	--	--
	8/25/93	601	--	--	5.20 C1	--	--	--	--	--
	11/23/93	601	--	--	3.90 C1	--	--	--	--	--
SRM MW-18 D	5/01/92	601	--	--	< 0.50	--	--	--	--	--
	8/01/92	601	--	--	< 0.50	--	--	--	--	--
	8/01/92	601	--	--	< 0.50	--	--	--	--	--
	2/01/93	601	--	--	< 0.50	--	--	--	--	--
	5/25/93	601	--	--	< 0.50	--	--	--	--	--
	8/25/93	601	--	--	< 0.50 C1	--	--	--	--	--
	11/23/93	601	--	--	< 0.50 C1	--	--	--	--	--
SRM MW-19	8/01/92	601	--	--	< 0.50	--	--	--	--	--
	2/01/93	601	--	--	< 0.50	--	--	--	--	--
	2/25/93	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
	8/25/93	601	--	--	< 0.50 C1	--	--	--	--	--
	11/23/93	601	--	--	< 0.50 C1	--	--	--	--	--
SRM MW-20	8/01/92	601	--	--	< 0.50	--	--	--	--	--
	8/25/93	601	--	--	< 0.50 C1	--	--	--	--	--
SRM MW-21 D D D D	5/01/92	601	--	--	1.30 C1	--	--	--	--	--
	5/01/92	601	--	--	1.30 C1	--	--	--	--	--
	8/01/92	601	--	--	< 0.50	--	--	--	--	--
	2/01/93	601	--	--	4.40 C1	--	--	--	--	--
	2/01/93	601	--	--	4.50 C1	--	--	--	--	--
	2/25/93	8010	< 10.00	< 10.00	< 10.00	< 25.00	--	--	--	< 50.00
	2/25/93	8010	< 0.20	< 0.20	2.60	< 0.50	--	--	--	< 1.00
	5/25/93	601	--	--	6.10 C1	--	--	--	--	--
	8/25/93	601	--	--	1.20 C1	--	--	--	--	--
	11/23/93	601	--	--	1.70 C1	--	--	--	--	--
SRM WP-01	5/01/92	601	--	--	2.30 C1	--	--	--	--	--
	8/01/92	601	--	--	2.20 C1	--	--	--	--	--
	2/01/93	601	--	--	< 0.50	--	--	--	--	--
	5/28/93	601	--	--	1.30 C1	--	--	--	--	--
	8/27/93	601	--	--	1.30 C1	--	--	--	--	--
	11/23/93	601	--	--	2.10 C1	--	--	--	--	--

Table 2: Results of Chemical Analyses for VOCs in Groundwater
VW&R PSA SI/RA Report

Location	Sample Date	Test Method	1,1,1-Trichloro ethane	1,1,2-Trichloro ethane	Trichloro ethene	Trichloro fluoro methane	1,2,3-Trichloro propane	1,2,4-Trimethyl benzene	1,3,5-Trimethyl benzene	Vinyl chloride
SRM WP-02	5/01/92	601	--	--	2.40 C1	--	--	--	--	--
	8/01/92	601	--	--	3.10 C1	--	--	--	--	--
	2/01/93	601	--	--	< 0.50	--	--	--	--	--
	5/27/93	601	--	--	2.20 C1	--	--	--	--	--
	8/25/93	601	--	--	1.20 C1	--	--	--	--	--
	11/23/93	601	--	--	2.80 C1	--	--	--	--	--
SRM WP-03	5/01/92	601	--	--	3.80 C1	--	--	--	--	--
	8/01/92	601	--	--	4.00 C1	--	--	--	--	--
	2/01/93	601	--	--	3.70 C1	--	--	--	--	--
	2/25/93	8010	< 0.20	< 0.20	2.40	< 0.50	--	--	--	< 1.00
	5/27/93	601	--	--	3.50 C1	--	--	--	--	--
	8/26/93	601	--	--	3.00 C1	--	--	--	--	--
	11/23/93	601	--	--	3.00 C1	--	--	--	--	--
SRM WP-1211	5/01/92	601	--	--	1.70 C1	--	--	--	--	--
SRM WP-123E	5/01/92	601	--	--	< 0.50	--	--	--	--	--
	8/01/92	601	--	--	< 0.50	--	--	--	--	--
	2/01/93	601	--	--	< 0.50	--	--	--	--	--
	5/28/93	601	--	--	< 0.50	--	--	--	--	--
	8/25/93	601	--	--	< 0.50 C1	--	--	--	--	--
	11/23/93	601	--	--	< 0.50 C1	--	--	--	--	--
SRM WP-123I	8/01/92	601	--	--	2.90 C1	--	--	--	--	--
	2/01/93	601	--	--	< 0.50	--	--	--	--	--
	5/28/93	601	--	--	2.30 C1	--	--	--	--	--
	8/25/93	601	--	--	2.20 C1	--	--	--	--	--
	11/23/93	601	--	--	2.50 C1	--	--	--	--	--
Sunrise Well	5/19/94	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
	8/11/94	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
	11/09/94	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
TRIP BLANK	5/01/92	601	--	--	< 0.50	--	--	--	--	--
	8/01/92	601	--	--	< 0.50	--	--	--	--	--
	8/19/92	8010	< 1.00	< 1.00	< 1.00	< 1.00	--	--	--	< 1.00
	8/20/92	8010	< 1.00	< 1.00	< 1.00	< 1.00	--	--	--	< 1.00
	8/21/92	8010	< 1.00	< 1.00	< 1.00	< 1.00	--	--	--	< 1.00
	1/26/93	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
	2/22/93	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
	2/24/93	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
	2/25/93	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00

Table 2. Results of Chemical Analyses for VOCs In Groundwater
VW&R PSA SI/RA Report

Location	Sample Date	Test Method	1,1,1-Trichloro ethane	1,1,2-Trichloro ethane	Trichloro ethene	Trichloro fluoro methane	1,2,3-Trichloro propane	1,2,4-Trimethyl benzene	1,3,5-Trimethyl benzene	Vinyl chloride
TRIP BLANK										
	2/26/93	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
	5/17/93	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
	5/19/93	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
	5/24/93	601	--	--	< 0.50	--	--	--	--	--
	8/17/93	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
	8/26/93	601	--	--	< 0.50 C1	--	--	--	--	--
	11/16/93	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
	11/23/93	601	--	--	< 0.50 C1	--	--	--	--	--
	12/13/93	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
	1/11/94	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
	2/24/94	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
	4/17/94	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
	5/19/94	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
	8/11/94	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
	8/15/94	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
	9/29/94	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00
	11/09/94	8010	< 0.20	< 0.20	< 0.20	< 0.50	--	--	--	< 1.00

Location	Sample Date	Test Method	ortho-Xylene
Ash Park	Ln(ott) 2/18/93	502.2	< 10000.00

Table 3. Results of Chemical Analyses for Metals in Groundwater
VW&R PSA SI/RA Report

Location	Sample Date	Test Method	Aluminum	Copper	Iron	Magnesium	Manganese	Potassium	Zinc (total)
Mitchell-Trailr	8/20/92	6010	< 200.00	40.00	< 100.00	15000.00	< 20.00	2000.00	30.00
Hampton-House	8/20/92	6010	< 200.00	< 30.00	< 100.00	17000.00	< 20.00	2000.00	80.00
Hampton-IcePlnt	8/20/92	6010	< 200.00	< 30.00	< 100.00	12000.00	< 20.00	2000.00	< 20.00
Benjamin	8/20/92	6010	< 200.00	< 30.00	< 100.00	28000.00	< 20.00	3000.00	< 20.00
Fairview	8/20/92	6010	< 200.00	50.00	< 100.00	15000.00	< 20.00	2000.00	90.00

Notes:

All concentrations reported in micrograms per liter ($\mu\text{g/L}$).
 < indicates value was not detected at or above stated detection limit.
 Dashes (--) indicate that no analysis performed for this entry.
 D indicates a duplicate sample.

Table 4. Results of Chemical Analyses for General Inorganics in Groundwater

			Sample	8209214	8209205	8209208	8209209	8209213
			Date	8/20/92	8/20/92	8/20/92	8/20/92	8/20/92
EPA Test								
General Minerals	Method	Units						
Aluminum	6010	µg/l		<200	<200	<200	<200	<200
Calcium	6010	µg/l		59000	38000	45000	43000	49000
Copper	6010	µg/l		<30	50	<30	<30	40
Iron	6010	µg/l		<100	<100	<100	<100	<100
Magnesium	6010	µg/l		28000	15000	17000	12000	15000
Manganese	6010	µg/l		<20	<20	<20	<20	<20
Potassium	6010	µg/l		3000	2000	3000	2000	2000
Sodium	6010	µg/l		39000	29000	28000	54000	41000
Zinc	6010	µg/l		<20	90	80	<20	30
Total Dissolved Solids	160.1	mg/l		460	270	310	330	340
Alkalinity	403	mg/l		250	210	230	230	250
Carbonate	403	mg/l		<5	<5	<5	<5	<5
Bicarbonate	403	mg/l		310	250	280	280	310
Hydroxide	403	mg/l		<5	<5	<5	<5	<5
Chloride	300	mg/l		23	6.0	6.7	14.0	7.9
Sulfate	300	mg/l		73	15	18	34	27
Nitrates	353.2	mg/l		3.9	1.7	1.7	2.2	2.1
General Chemistry								
Hardness	2340	mg/l		260	160	180	160	180
Conductivity	120.1	µmhos/cm		660	420	460	530	520
pH	150.1	pH units		7.8	7.6	7.7	7.4	7.5
MBAS	425.1	mg/l		<0.1	<0.1	<0.1	<0.1	<0.1

* = Duplicate sample.

< = Not detected at or above detection limit shown.

MBAS = Foaming agents.

**Table 5. Analytical Methods
VW&R PSA SI/RA Report**

Parameters	EPA Test Method
Volatile Organic Compounds	8010
General Minerals	6010
Aluminum	
Calcium	
Copper	
Iron	
Magnesium	
Manganese	
Potassium	
Sodium	
Zinc	
Total Dissolved Solids	160.1
Alkalinity	403
Carbonate	403
Bicarbonate	403
Hydroxide	403
Chloride	300
Sulfate	300
Hardness	2340
Conductivity	120.1
pH	150.1
MBAS	425.1

**Table 6. February 1993 Monitoring Well Sampling Summary
VW&R PSA SI/RA Report**

Owner/ Consultant	Well Description	Location	Depth to Water BTOC	Total Depth (feet)	Sample Results (µg/l)
SRM	Monitoring	<u>Westpark Area</u>			
		MW-3	Dry	15.62	Dry
		MW-10	15.08	44.05	PCE 0.5
		MW-11	18.14	37.97	1,1,1-TCA 0.9
					PCE 0.8
		MW-16	Dry	16.6	Dry
		MW-19	14.37	44.55	ND
		MW-21	16.81	45.43	PCE 450
		WP-3	20.88	45.63	PCE 490
					TCE 2.4
					cis-1,2-DCE 1.4
Chen-Northern	Monitoring	<u>370 Benjamin Area</u>			
		MW-2	14.46	NM	Replaced with MW-1
					1,1-DCE 1.2
		MW-9	15.71	16.85	PCE 0.6
					1,1,1-TCA 0.4
		MW-10	14.01	16.55	Chloroform 0.4
					Never recovered
					Not sampled

BTOC = Below top of casing (north side)
 NM = Not measured
 ND = Not detected
 (µg/l) = micrograms per liter

**Table 7. Groundwater Analytical Results,
2212 N. Sunrise Monitoring Well
VW&R PSA SI/RA Report**

Sample Number	Sample Date	Sample Type	Depth (feet)	PCE ($\mu\text{g/l}$)	Other Detected 8010 Analytes ($\mu\text{g/l}$)
94022201	2/22/94	Hydropunch	20'	ND	ND
94022202	2/22/94	Hydropunch	30'	ND	ND
94022203	2/22/94	Hydropunch	30' (dup)	ND	ND
94022204	2/22/94	Hydropunch	40'	ND	ND
94022205	2/22/94	Hydropunch	50'	ND	ND
94022206	2/22/94	Trip Blank	NA	ND	ND
94080901	3/09/94	Well Sample	NA	0.3	ND
94030902	3/09/94	Well Sample (Dup)	NA	0.3	ND
94030903	3/09/94	Equip. Blank	NA	ND	Chloroform: 0.4

ND	Not detected
Well Sample	Sample collected from completed well
NA	Not Applicable
$\mu\text{g/l}$	micrograms per liter

**Table 8. Groundwater Analytical Results,
Five Mile Extraction Well-1 (FMEW-1)
VW&R PSA SI/RA Report**

Sample Number	Sample Date	Location	Depth (feet)	Sample Type	PCE Concentration (µg/l)	Other Detected Analytes (µg/l)
58983	7/7/94	FMEW-1 boring	10	Hydropunch	5.5	TCE-1.0
58984	7/7/94	FMEW-1 boring	20	Hydropunch	2.7	ND
59037	7/8/94	FMEW-1 boring	30	Hydropunch	1.6	ND
94081501	8/15/94	FMEW-1 well	NA	Well	1.5	ND
94081502	8/15/94	FMEW-1 well (dup.)	NA	Well	1.7	ND
94081503	8/15/94	Trip Blank	NA	QC	ND <0.2	ND

Notes:

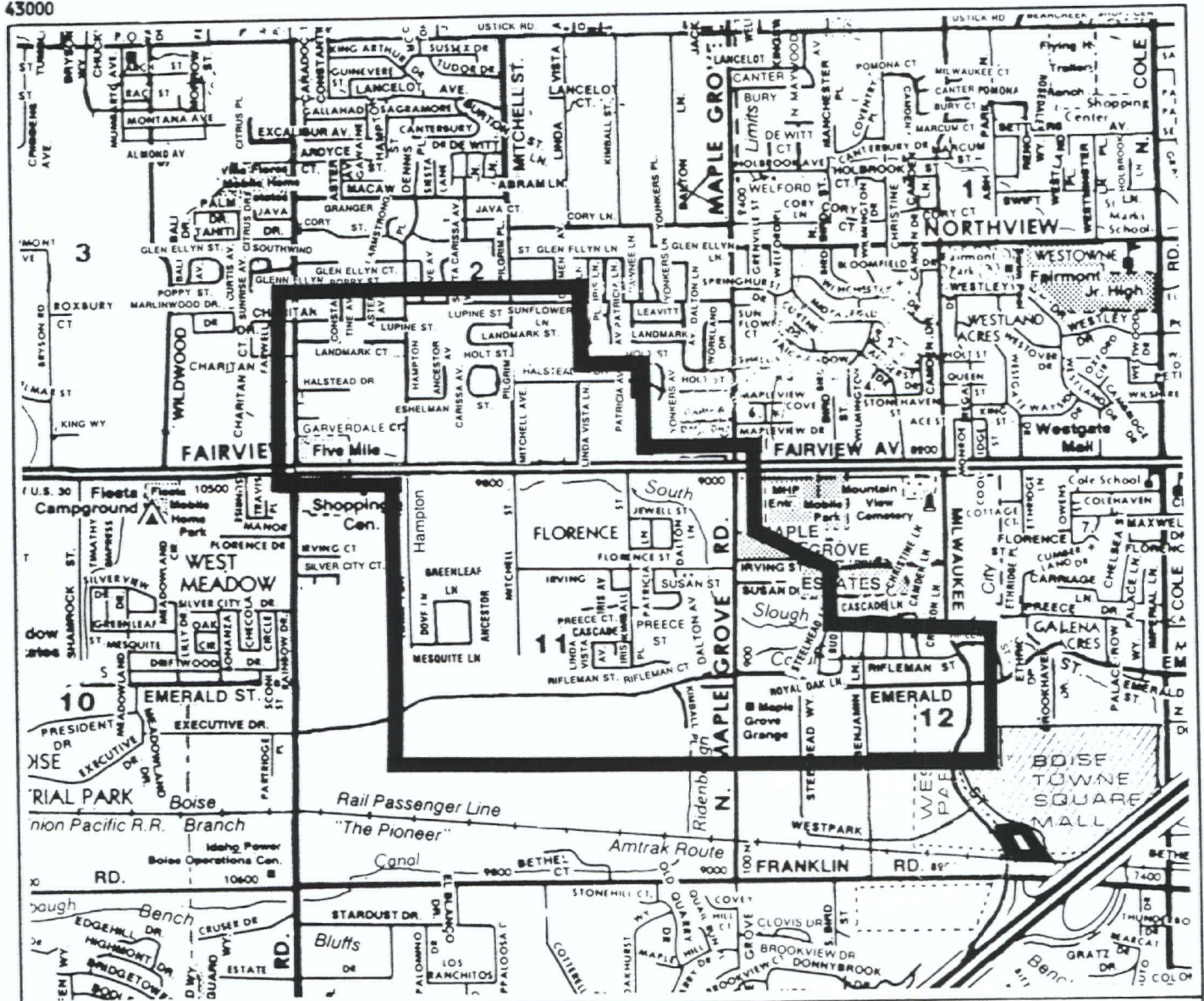
µg/l Micrograms per liter
PCE Perchloroethylene
TCE Trichloroethene
ND Not detected
NA Not applicable

**Table 9. Finch Lateral Surface Water Sampling Results
VW&R PSA SI/RA Report**

Station Number	Location	Sample Date	Sample Number	PCE Concentration (µg/l)	Total Discharge (cfs)	Comments
1	Finch Lateral below Westpark discharge	4/7/92	SS-11	1.85	0.28	
		7/1/93	93070101	1.5	0.83	
2	Finch Lateral at Emerald	4/7/92	SS-9	0.67	0.36	Gaining
		7/1/93	93070103	0.8	1.02	Gaining
3	Finch Lateral at Ridenbaugh Canal	4/7/92	SS-5	6.89	0.39	Gaining
		7/1/93	93070104	4.8	11.07	Gaining
4	Finch Lateral at Maple Grove	4/7/92	SS-4	6.29	0.6	Gaining
		7/1/93	93070106	3.5	14.55	Gaining
5	Finch Lateral at Irving	4/7/92	SS-3	4.11	0.14	Losing
		7/1/93	93070107	1.1	48.47	Gaining
6	Finch Lateral at Kimball	4/7/92	SS-2	1.39	0.26	Gaining
		7/1/93	93070108	1	51.1	Gaining
7	Finch Lateral at Mitchell	4/7/92	SS-1	0.81	0.2	Losing
		7/1/93	93070109	1	55.44	Gaining
8	Finch Lateral at Fairview	4/7/92	SS-12	0.35	0.13	Losing
NA	Upgradient of Westpark discharge	7/1/93	93070102	<0.2	NA	
NA	Ridenbaugh Canal at Finch Lateral	7/1/93	93070105	<0.2	NA	
NA	Transfer Blank	4/7/92	SS-6	ND	NA	
NA	Trip Blank	4/7/92	SS-8	ND	NA	
		7/1/93	93070110	<0.2	NA	

µg/l micrograms per liter
 NA Not applicable
 cfs cubic feet per second
 ND Not detected (unspecified detection limit)

PLATES



REFERENCE: Boise Metro Map, Published by Hunt Enterprises, Boise

EXPLANATION



Mall Investigation Area



Preliminary Study Area

0 1/2 1
SCALE IN MILES

N



**Harding Lawson
Associates**
Engineering and
Environmental Services

Preliminary Study Area
VW&R PSA SI Report
Boise, Idaho

PLATE

1

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JOB NUMBER 20783 007

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SMB

DATE 4/92

REVISED DATE 1/95

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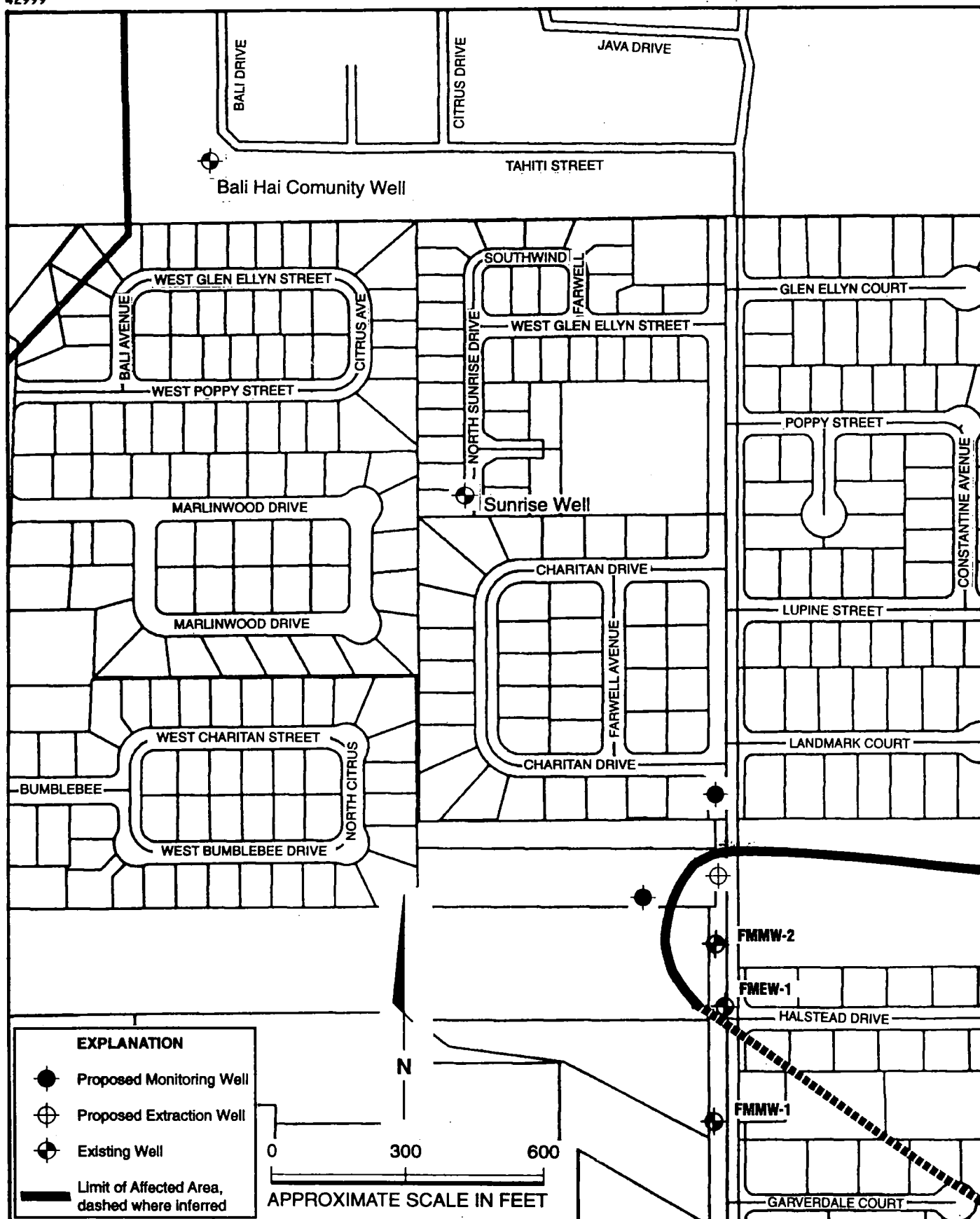
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**IRM Well Locations,
North Five Mile Road Area**
VW&R PSA SI Report
Boise, Idaho

APPROVED
SMS

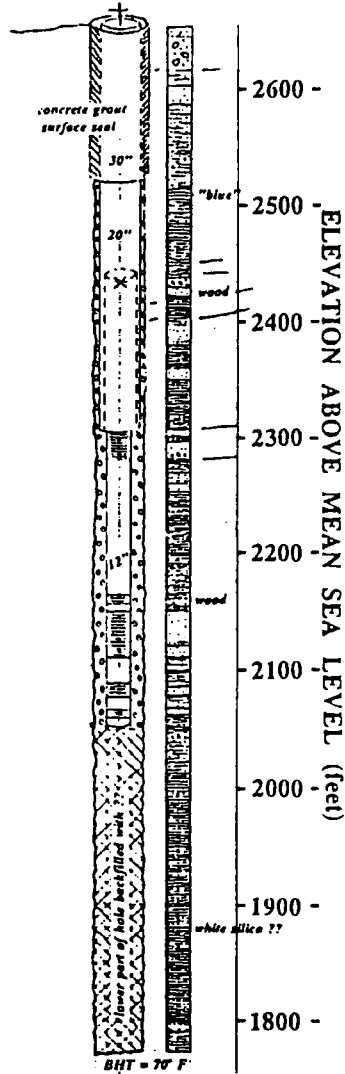
DATE
12/94

REVISED DATE
1/95

PLATE

3

Bali-Hai
BWC
10/20/1972
880 ft



3700 gpm/ 10hrs/ 221 ft drawdown
2200 gpm/ 167 ft drawdown
artesian flowing 1/1990
80 ft 12"X60 slot stainless screen
1/4" gravel filter pack
municipal
Pete Cope
reverse rotary



Harding Lawson Associates
Engineering and
Environmental Services

Bali Hai Well Log
VW&R PSA SI Report
Boise, Idaho

PLATE

4

DRAWN
LZ

JOB NUMBER
20783 007

APPROVED
SmB

DATE
3/95

REVISED DATE

APPENDIX

**DEPARTMENT COMMENTS AND
RESPONSE TO COMMENTS LETTER**

20783
007



IDAHO DEPARTMENT
OF HEALTH AND WELFARE

DIVISION OF
ENVIRONMENTAL QUALITY

1445 North Orchard, Boise, ID 83706-2239, (208) 334-0550

Philip E. Balt, Governor

February 15, 1995

Mr. Mike Gaudette
Van Waters & Rogers, Inc.
2723 South Cole Road
Boise, Idaho 83709

Re: Site Investigation Report, Preliminary Study Area, Boise, Idaho

Dear Mr. Gaudette:

The Division of Environmental Quality (DEQ) has reviewed the Site Investigation Report for the Preliminary Study Area (PSA) dated January 26, 1995. We ask that you respond to each of the comments or questions provided below in letter format and revise the report appropriately.

1. **General Comment;** In order to more directly correlate with the PSA Workplan and the PSA Consent Order, please include the term "Phase I" in the title of this report.
2. **General Comment;** The PSA Consent Order and Workplan state that the Phase I site investigation is to include the identification of potential human and environmental receptors. DEQ understands that a risk assessment is being performed separately from this investigation. However, it may be prudent to include a cursory discussion of potential receptors in this report to maintain consistency with the Workplan and Consent Order.
3. **General Comment;** For record-keeping purposes we would prefer that you present the Phase II Workplan as a separate document rather than as an appendix to this report.
4. **Executive Summary, page vi;** The statement that "75 feet of 'blue' clay underlies the silty sand" appears to be directed to a description of the entire PSA. It is our understanding that the Bali Hai driller's log forms the basis for this conclusion. Is this enough evidence to make an unconditional statement about the existence of the "blue clay" site-wide?
5. **Executive Summary, page vii;** The statement that the "Seismic reflection survey results confirm the presence of a low permeability layer" implies great confidence in

Mike Gaudette
February 15, 1995
Page 2

the limited seismic data that were collected. We would suggest replacing the word "confirm" with a less-decisive word.

6. Page 5, first paragraph; A typographical error occurs: "data" should be "date".
7. Page 7; The first reference to the Finch Lateral should include an explanation that the name was changed from the South Slough in 1994.
8. Page 11, second paragraph; A word appears to be missing from the sentence "Underlying and separated from the older terrace gravels by an unconfirmed * is the Glens Ferry..."
9. Page 18, first paragraph; A typographical error occurs: "fifteen residential wells have sampled..."
10. Page 32; Much of the basis for the conceptual subsurface geologic model for the PSA is based on information from the Bali Hai well log. A copy of the log should be included at the end of the report.
11. Page 40; The comments described above (see comments 4. and 5.) with regard to the 75 feet of blue clay and the "confirmation" of its presence based on the seismic study results also apply to this page.
12. Table 4; The footnote describing the measurement units for the data in this table does not appear to be correct. Several units are needed to accurately describe these values.

Please review these comments and feel free to contact me at (208) 334-0550 if you have additional questions.

Sincerely,



Rob Howarth
Environmental Hydrogeologist

RH:ajc

cc: Chris Smith, HLA
Ron Lane, DEQ/SWIRO
Doug Conde, Deputy Attorney General
Reading File
PSA File

PHASEI.295



February 27, 1995

20783 007

Mr. Rob Howarth
Idaho Department of Health & Welfare
Division of Environmental Quality
1445 N. Orchard
Boise, Idaho 83706-2239

At the request of Van Waters & Rogers Inc. (VW&R), Harding Lawson Associates (HLA) has prepared this letter to respond to comments received from the Idaho Department of Health and Welfare, Division of Environmental Quality (IDEQ) dated February 15, 1995, regarding the *Draft Site Investigation Report, Preliminary Study Area, Boise, Idaho* dated January 26, 1995. The comments and responses are listed below.

Comment 1. General Comment; In order to more directly correlate with the PSA Workplan and the PSA Consent Order, please include the term "Phase I" in the title of this report.

Response: "Phase I" will be added to the title of the report.

Comment 2. General Comment; The PSA Consent Order and Workplan state that the Phase I site investigation is to include the identification of potential human and environmental receptors. DEQ understands that a risk assessment is being performed separately from this investigation. However, it may be prudent to include a cursory discussion of potential receptors in this report to maintain consistency with the Workplan and Consent Order.

Response: A cursory discussion of potential receptors will be added to Section 3.5 *Land Use* of the Site Investigation Report. The report will also include the statement that a more in depth discussion of potential receptors will be included in the PSA Risk Assessment. The proposed language for Section 3.5 follows. Proposed additions have been underlined.

3.5 Land Uses and Potential Receptors

Land uses within the PSA consist of residential, commercial, and agricultural. The eastern portion of the PSA (the area closest to the Mall) is almost exclusively commercial. Workers (office, construction, and maintenance), shoppers, and visitors (including adults and children) are present at times in the commercial areas. The remainder of the PSA is predominately residential and agricultural, although some commercial areas exist. Residents (including adults and children), farmers, and office/commercial workers are present in these areas. A more in depth discussion of potential receptors will be included in the PSA Risk Assessment to be submitted at a later date. The commercial areas are expanding rapidly and the agricultural areas are diminishing as new housing projects are built. Water for the commercial areas, new housing areas, and a majority of the older residential areas is

February 27, 1995
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Mr. Rob Howarth
Idaho Department of Health & Welfare
Page 2

supplied by BWC. Wells in the area are mostly used for irrigation and agricultural purposes, although a few wells are used for household and drinking water purposes. One community well, the Bali Hai well, owned by BWC is located approximately one thousand feet northwest of the PSA. The Bali Hai well is shown on Plate 3.

Comment 3. General Comment; For record-keeping purposes we would prefer that you present the Phase II Workplan as a separate document rather than as an appendix to this report.

Response: The Phase II Work Plan will be deleted as an appendix to the Site Investigation Report and resubmitted as a stand alone document.

Comment 4. Executive Summary, page vi; The statement that "75 feet of 'blue' clay underlies the silty sand" appears to be directed to a description of the entire PSA. It is our understanding that the Bali Hai driller's log forms the basis for this conclusion. Is this enough evidence to make an unconditional statement about the existence of the "blue clay" site-wide?

Response: The Bali Hai well log forms the basis for the statement that "75 feet of blue clay underlies the silty sand". We recognize that the blue clay may only be present in the vicinity of the Bali Hai well, not necessarily site-wide. The language in the Executive Summary will be modified to reflect the language in Section 6.1.1 *Lithologies*. The proposed changes have been underlined.

- The stratigraphy in the northwestern portion of the site generally consists of approximately five feet of silty sand or sandy silt underlain by 30 to 35 feet of sandy gravel. The sandy gravel is underlain by silty sand to an approximate depth of 135 feet. According to the Bali Hai well log, approximately 75 feet of "blue" clay underlies the silty sand.
- According to boring logs generated by SRM, the shallow stratigraphy in the Westpark area is similar to the stratigraphy in the northwestern portion of the PSA and, in general, consists of five feet of clay or silty sand underlain and by 30 to 35 feet of sandy gravel or gravelly sand. Silty sand is present beneath the gravels at an approximate depth of 35 to 40 feet.

Comment 5. Executive Summary, page vii; The statement that the "Seismic reflection survey results confirm the presence of a low permeability layer" implies great confidence in the limited seismic data that were collected. We would suggest replacing the word "confirm" with a less-decisive word.

Response: The word "confirm" will be replaced with "suggest".

February 27, 1995
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Mr. Rob Howarth
Idaho Department of Health & Welfare
Page 3

Comment 6. Page 5, first paragraph; A typographical error occurs: "data" should be "date".

Response: The word "data" will be replaced with "date".

Comment 7. Page 7; The first reference to the Finch Lateral should include an explanation that the name was changed from the South Slough in 1994.

Response: The second sentence in Section 2.2.3 will be modified to include the words "formerly known as the South Slough" after the first reference to the Finch Lateral.

Comment 8. Page 11, second paragraph; A word appears to be missing from the sentence "Underlying and separated from the older terrace gravels by an unconfirmed * is the Glens Ferry...."

Response: The word "unconfirmed" will be changed to "unconformity".

Comment 9. Page 18, first paragraph; A typographical error occurs: "fifteen residential wells have sampled...."

Response: The word "have" will be changed to "were".

Comment 10. Page 32; Much of the basis for the conceptual subsurface geologic model for the PSA is based on information from the Bali Hai well log. A copy of the log should be included at the end of the report.

Response: A copy of the Bali Hai well log will be included as Plate 4.

Comment 11. Page 40; The comments described above (see Comments 4 and 5) with regard to the 75 feet of blue clay and the "confirmation" of its presence based on the seismic study results also apply to this page.

Response: The word "confirm" will be changed to "suggest". Additionally, the language will be modified to reflect the language in the response to Comment 4.

Comment 12. Table 4; The footnote describing the measurement units for the data in this table does not appear to be correct. Several units are needed to accurately describe these values.

Response: Table 4 will be modified to correctly identify the measurement units and be more "user friendly". A revised Table 4 is attached.

The Phase I PSA Site Investigation Report and Phase II Work Plan will be resubmitted to IDEQ within 14 days of approval of this response to comments letter. This letter will be included as an Appendix to the Phase I Report.

February 27, 1995
20783 007
Mr. Rob Howarth
Idaho Department of Health & Welfare
Page 4

If you have additional questions or would like to discuss this matter further, please contact either of the undersigned at (415) 883-0112, or call Mike Gaudette of VW&R at (800) 284-6264, ext. 8455.

Yours very truly,

HARDING LAWSON ASSOCIATES

S. Michelle Beekman

S. Michelle Beekman
Senior Geologist

Christopher R. Smith

Christopher R. Smith
Principal Hydrogeologist

SMB/CRS/JC39190-V

Attachment: Table 4

cc: Mike Gaudette, VW&R
Wayne Grotheer, VW&R
Allan Bakalian, VW&R
Scott Vokey, Preston Gates & Ellis
Ron Lane, IDEQ

Table 4. Results of Chemical Analyses for General Inorganics in Groundwater

			Sample	8209214	8209205	8209208	8209209	8209213
			Date	8/20/92	8/20/92	8/20/92	8/20/92	8/20/92
EPA Test								
General Minerals	Method	Units						
Aluminum	6010	µg/l		<200	<200	<200	<200	<200
Calcium	6010	µg/l		59000	38000	45000	43000	49000
Copper	6010	µg/l		<30	50	<30	<30	40
Iron	6010	µg/l		<100	<100	<100	<100	<100
Magnesium	6010	µg/l		28000	15000	17000	12000	15000
Manganese	6010	µg/l		<20	<20	<20	<20	<20
Potassium	6010	µg/l		3000	2000	3000	2000	2000
Sodium	6010	µg/l		39000	29000	28000	54000	41000
Zinc	6010	µg/l		<20	90	80	<20	30
Total Dissolved Solids	160.1	mg/l		460	270	310	330	340
Alkalinity	403	mg/l		250	210	230	230	250
Carbonate	403	mg/l		<5	<5	<5	<5	<5
Bicarbonate	403	mg/l		310	250	280	280	310
Hydroxide	403	mg/l		<5	<5	<5	<5	<5
Chloride	300	mg/l		23	6.0	6.7	14.0	7.9
Sulfate	300	mg/l		73	15	18	34	27
Nitrates	353.2	mg/l		3.9	1.7	1.7	2.2	2.1
General Chemistry								
Hardness	2340	mg/l		260	160	180	160	180
Conductivity	120.1	µmhos/cm		660	420	460	530	520
pH	150.1	pH units		7.8	7.6	7.7	7.4	7.5
MBAS	425.1	mg/l		<0.1	<0.1	<0.1	<0.1	<0.1

* = Duplicate sample.

< = Not detected at or above detection limit shown.

MBAS = Foaming agents.



IDAHO DEPARTMENT
OF HEALTH AND WELFARE

DIVISION OF
ENVIRONMENTAL QUALITY

1445 North Orchard, Boise, ID 83706-2239, (208) 334-0550

Philip E. Batt, Governor

March 3, 1995

Mr. Mike Gaudette
Van Waters & Rogers, Inc.
2723 South Cole Road
Boise, Idaho 83709

Re: Response to the Division of Environmental Quality's Comments on the Site
Investigation Report, Preliminary Study Area, Boise, Idaho

Dear Mr. Gaudette:

The Division of Environmental Quality (DEQ) has reviewed your responses to our comments on the Phase I Site Investigation Report submitted to us on your behalf by Harding Lawson Associates. We find that all of the responses are acceptable and ask that you submit the final report for approval. Please feel free to contact me at (208) 334-0550 if you have additional questions.

Sincerely,

Rob Howarth
Environmental Hydrogeologist

RH:ajc:\PHAIREP.395

cc: Chris Smith, HLA
Ron Lane, DEQ/SWIRO
Doug Conde, Deputy Attorney General
Reading File
PSA File

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Phase I Site Investigation Report
Preliminary Study Area
Boise, Idaho

March 7, 1995

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Boise, Idaho 83709
- Copy 2: Mr. Wayne Grotheer
Van Waters & Rogers Inc.
6100 Carillon Point
Kirkland, Washington 98033
- Copy 3: Mr. Allan Bakalian
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- Copies 4-7: Mr. Scott Vokey
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5400 Columbia Center
701 Fifth Avenue
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- Copies 8-10: Mr. Ron Lane
Idaho Department of Health and Welfare
Division of Environmental Quality
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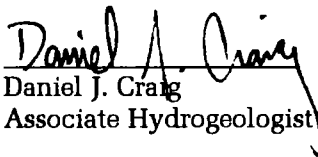
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Preliminary Study Area
Boise, Idaho

March 7, 1995

Copies 11-12: Mr. Ed Squires
Boise Water Corporation
Boise, Idaho

Copies 13-19: Harding Lawson Associates

Quality Control Reviewer


Daniel J. Craig
Associate Hydrogeologist

SMB/CRS/pbn/C35219-H

Harding Lawson Associates